

Exhibit 7

PLAINTIFFS' RESPONSE TO DEFENDANTS' MOTION TO EXCLUDE GENERAL CAUSATION TESTIMONY OF PLAINTIFFS' EXPERTS

Case No.: 4:22-md-03047-YGR
MDL No. 3047

In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation

Lembke Rebuttal Report

Highly Confidential — Subject to Protective Order

EXPERT REBUTTAL REPORT, ANNA LEMBKE, M.D.

July 30, 2025

RELATING TO: SOCIAL MEDIA LITIGATION

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A. Summary of Rebuttal Opinions

Following a careful review of Defendants' experts' reports, the opinions outlined in my Report have not changed. In addition, for the reasons set forth in detail in this Rebuttal Report, I hold the following opinions:

- 1. I disagree with Defendants' experts that social media addiction is not recognized as a psychiatric disorder. Social media addiction has been widely recognized in the clinical treatment community, the medical literature, numerous professional leadership organizations, and the Defendants' own documents, albeit using different language in different contexts. I disagree with Defendants' experts' criticisms of the Bergen Social Media Scale and similar scales. These scales are validated scales relied on in the peer-reviewed literature and by Defendants' own researchers.**
- 2. I disagree with Defendants' experts that addiction to substances (drugs) is fundamentally distinct and different from addiction to behaviors, including but not limited to gambling, eating, sex, and social media. Decades of clinical experience and medical literature have shown that people can get addicted to behaviors just as well as they can get addicted to drugs. The phenomenology (patterns of behavior) for drug addiction and behavioral addiction are similar if not identical.**
- 3. I disagree that social media addiction is pathologizing normal/common behavior. Defendants' social media platforms have made social connection addictive through design features that promote ease of access, frictionless overabundance, high potency, high novelty, and uncertainty, thereby exploiting users' need for social validation and connection, and turning a healthy behavior into an addictive one.**
- 4. I disagree with Defendants' experts that the scientific literature on social media addiction is insufficient or outweighed by the literature showing benefits of social media in youth. The totality of the evidence, based on my clinical experience, the medical literature, and importantly, the Defendants' own internal documents, is more than sufficient to demonstrate the addictive and harmful nature of their products. Given the known risks, Defendants should warn adolescents and their parents about the addictive nature of their platforms.**

B. Detailed Statements of Rebuttal Opinions

1. I disagree with Defendants' experts that social media addiction is not recognized as a psychiatric disorder. Social media addiction has been widely recognized in the clinical treatment community, the medical literature, numerous professional leadership organizations, and the Defendants' own documents, albeit using different language in different contexts. I further disagree that the Bergen Social Media Scale and other similar scales are an invalid way to assess for social media addiction. These scales are validated scales relied on in the peer-reviewed literature and by Defendants' own researchers.

- a. In February 2024, the American Psychiatric Association (APA) recognized the validity of the term ‘social media addiction,’ and provided a clear and concise definition of that diagnosis: “Social media addiction involves problematic and compulsive use of social media; an obsessive need to check and update social media platforms, often resulting in problems in functioning and disrupted real-world relationships.”¹
- b. Dr. Galván writes, “A hallmark of DSM-classified use disorders is determining that there is a ‘problematic pattern … leading to clinically significant impairment or distress,’ including interfering with daily functioning. In other words, for someone to be classified as having an addictive ‘disorder,’ their social media use would need to meet this important threshold requirement and that this then resulted in interference with daily function to the point that person was forgoing eating, grooming, socializing with others, and leaving the house due to constant social media use. Evidence for this level of significant interference with daily life, particularly among adolescents, does not exist in the peer-reviewed literature.”²
- c. Dr. Galván’s claim is more specific and extreme than any generally accepted diagnostic criteria for addiction/use disorder that I am aware of. Indeed, the above-quoted text is more extreme than the generally accepted definition of addiction to substances such as opioids, which are described as ‘spectrum’ disorders, from mild to severe. None of the DSM criteria for substance use disorders specifically include language like “forgoing eating, grooming, socializing with others, and leaving the house due to constant social media use”.³ There is no literature to support the view that the criteria for social media addiction should be more stringent than those for substance use disorders.
- d. Dr. Kishida writes, “The plaintiffs’ use of the terms derived from “addict” (i.e., “addictive,” “addiction,” and related terms) is ambiguous; it is not clear whether they mean pathological “addiction” as in a severe substance use disorder or colloquial “addiction” as in “something someone likes a lot and is a little bit

¹ American Psychiatric Association (2024) What is Technology Addiction?. <https://www.psychiatry.org/patients-families/technology-addictions-social-media-and-more/what-is-technology-addiction>.

² Expert Report of Adriana Galván, Ph.D., In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL No. 3047), July 9, 2025 (herein after “Galván MDL Report”), at p. 15.

³ Galván MDL Report at p. 15.

ashamed of,” like romance novels (Lembke, 2011). Assuming a pathological construct, there is no sound scientific evidence demonstrating that social media platforms are ‘pathologically addictive.’”⁴

- e. Addiction is a spectrum disorder, and people can struggle with mild, moderate, or severe addictions. They can also struggle with minor addictions that might not meet threshold criteria for a psychiatric disorder but are still problematic and can cause harm. No matter where on this spectrum the individual lies, or what name you give to it, the patterns of behavior are similar and the underlying problem the same.
- f. The language of addiction medicine is currently in flux, with “addiction” being the most widely understood lay term to describe the behavior. Some sources use the term “abuse,” like the *National Institute on Drug Abuse (NIDA)*,⁵ or “alcoholism”, like the *National Institute on Alcohol Abuse and Alcoholism (NIAAA)*⁶ and *Alcoholics Anonymous (AA)*,⁷ and still others, like the *Diagnostic and Statistical Manual of Mental Disorders*, eschew these terms altogether in favor of newer more anodyne terms like “substance use disorder,” “gambling disorder,” and “Internet gaming disorder.”⁸
- g. Defendants avoid the language of addiction by using functionally equivalent terms such as “problematic use” (Meta),⁹ “toxic behavior” (Snapchat),¹⁰ “YouTube stickiness” (YouTube),¹¹ and “excessive [use]” (TikTok).¹²
- h. Defendants’ use of such alternative terms should not be interpreted to mean that there is controversy in the field about what addiction is. There is not. Addiction has been well defined for centuries. At its most basic level, it is the continued compulsive use of a substance or behavior despite harm to self and/or others. Defendants’ and Defendants’ experts’ focus on terminology, and specifically their avoidance of the term *addiction*, should not distract from the obvious: addiction by any other name is still addiction.
- i. Dr. Galván writes about the Bergen Social Media Scale, “... this scale and others that purport to assess social media addiction were designed to examine other

⁴ Expert Report of Kenneth T. Kishida, Ph.D. In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL No. 3047), July 9, 2025, (herein after “Kishida MDL Report”), at p. 4.

⁵ National Institute on Drug Abuse. (n.d.) About NIDA. <https://nida.nih.gov/about-nida>

⁶ National Institute on Alcohol Abuse and Alcoholism (n.d.) Mission Statement. <https://www.niaaa.nih.gov/our-work/mission-statement>.

⁷ Alcoholics Anonymous (n.d.) What is A.A.? <https://www.aa.org/what-is-aa>.

⁸ American Psychiatric Association. (2022). Diagnostic and statistical manual of mental disorders (5th ed., text rev.). <https://doi.org/10.1176/appi.books.9780890425787>, at pp. 545, 661, 913.

⁹ META3047MDL-040-00078853.

¹⁰ SNAP6110229 at SNAP6110232; SNAP6110234.

¹¹ GOOG-3047MDL-00874191 at *9 (produced natively).

¹² TIKTOK3047MDL-197-04799946 at TIKTOK3047MDL-197-04799948.

behaviors and simply adapted by substituting “social media” for the other behavior.”¹³

- j. There’s nothing wrong with substituting “social media” for other behaviors or for drugs and alcohol, and in fact that’s exactly how the Diagnostic and Statistical Manual of Mental Disorders (DSM) is organized. Each ‘drug’ is listed with the same 11 criteria under the broader umbrella category of ‘use disorder’,¹⁴ the DSM term for addiction. Gambling disorder criteria also largely adhere to the DSM criteria for a substance use disorder.¹⁵
- k. With respect to the scales, Dr. Tucker claims, “Moreover, these instruments fail to recognize that there are substantial differences across the diverse platforms, with each platform having different characteristics and features in a distinctly designed interface, such that important divergences would be expected in the relationship between these unique factors and a particular individual’s problematic usage (Cataldo 2022).”¹⁶ Defendants’ platforms are more similar than not, each copying the others’ addictive design features to capture the widest audience and increase watch time by exploiting behavioral reward mechanisms as discussed in my Report.¹⁷

2. I disagree with Defendants’ experts that addiction to substances (drugs) is fundamentally distinct and different from addiction to behaviors, including but not limited to gambling, eating, sex, and social media. Decades of clinical experience and medical literature have shown that people can get addicted to behaviors just as they can get addicted to drugs. The phenomenology (patterns of behavior) for drug addiction and behavioral addiction are similar if not identical.

- a. Dr. Galván claims, “There is a lack of consensus regarding ‘behavioral addictions’ generally, which are very different from well- recognized addictions to chemical substances.”¹⁸
- b. In fact, there is overwhelming consensus in the addiction medicine field that people can get addicted to behaviors as well as substances. We see patients with serious behavioral addictions all the time in clinical care, and the morbidity and mortality related to behavioral addictions is indisputable. Gambling disorder and

¹³ Galván MDL Report at p. 15.

¹⁴ American Psychiatric Association. (2022). Diagnostic and statistical manual of mental disorders (5th ed., text rev.). <https://doi.org/10.1176/appi.books.9780890425787>, at pp 545-537.

¹⁵ American Psychiatric Association. (2022). Diagnostic and statistical manual of mental disorders (5th ed., text rev.). <https://doi.org/10.1176/appi.books.9780890425787>, at pp 561.

¹⁶ Expert Report of Douglas Tucker, M.D., In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation, MDL No. 3047, July 9, 2025 (herein after “Tucker MDL Report”), at p. 10.

¹⁷ Expert Report, Anna Lembke, MD., Relating to: Social Media Litigation, May 16, 2025 (herein after “Lembke MDL Report”), at p. 23-78.

¹⁸ Galván MDL Report at p. 2.

Internet gaming disorder are already included in the DSM and ICD-11,¹⁹ and others are being considered, from social media addition to food addiction to sex addiction.²⁰ Indeed, as noted above, the American Psychiatric Association's 2024 statement of a definition of 'social media addiction' (Paragraph 1.a, above) provides further evidence of the consensus view that behavioral addictions, including social media addiction, do not differ meaningfully from those attributable to substance use.

- c. Further, leading professional medical organizations in the field of addiction medicine recognize that people can get addicted to behaviors as well as substances. The American Society of Addiction Medicine defined addiction as follows: "Addiction is a primary, chronic disease of brain reward, motivation, memory and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social and spiritual manifestations. This is reflected in an individual pathologically pursuing reward and/or relief by substance use *and other behaviors*. Addiction is characterized by inability to consistently abstain, impairment in behavioral control, craving, diminished recognition of significant problems with one's behaviors and interpersonal relationships, and a dysfunctional emotional response. Like other chronic diseases, addiction often involves cycles of relapse and remission. Without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death."²¹
- d. Dr. Galván writes, "Social media use does not operate on the brain in the manner that chemical substances that are potentially addictive do. There are no specific receptors, transporters, or enzymes known to respond specifically to the behavior of engaging in social media use. Additionally, unlike with substance use that can be 'addictive,' there is no comparable direct activation of the brain's reward system because the features that are used and the content that is seen on social media is processed through external mediums like our eyes, ears, and fingers before reaching our brains (much like other aspects of our phones or computers) and there are no social media receptors in our brains."²²
- e. But elsewhere in her report, Dr. Galván writes, "There are innumerable common and healthy experiences and stimuli that we all interact with every day that result in activation of the reward system (e.g., getting a good grade, being offered candy or money, compliments, learning something new, etc.). What activates the brain's reward systems can be unique to individuals, e.g., some people find certain foods

¹⁹ American Psychiatric Association. (2022). Diagnostic and statistical manual of mental disorders (5th ed., text rev.). <https://doi.org/10.1176/appi.books.9780890425787>, at pp. 661, 913; World Health Organization. (2019). International Statistical Classification of Diseases and Related Health Problems (11th ed.). <https://icd.who.int/>, at pp. 560-561,

²⁰ Vidal, C. & Sussman, C. (2025). Problematic Social Media User or Social Media Addiction in Pediatric Populations. *Pediatr Clin N Am* 72, 291-304, <https://doi.org/10.1016/j.pcl.2024.08.005>.

²¹ American Society of Addiction Medicine. (2011. August 15). Public Policy Statement: Short Definition of Addiction. https://web.archive.org/web/20181007192411/https://www.asam.org/docs/default-source/public-policystatements/1definition_of_addiction_short_4-11.pdf?sfvrsn=6e36cc2 (emphasis added).

²² Galván MDL Report at p.15.

(e.g., chocolate) rewarding while others do not. fMRI imaging will then reveal activation (increases in blood flow) in the brain's reward system based on what an individual finds rewarding. For example, in my lab we did a study to examine the reward system using a sugary drink as the rewarding stimulus. We asked research participants to rate how rewarding they found the sugary drink—only those who found it rewarding elicited fMRI activation in the reward center whereas those who found a different drink rewarding elicited activation in the same reward region in response to the other drink. In other words, fMRI activation was linked to the stimuli that the individual person found rewarding (Galván and McGlennen, 2013).”²³

- f. I agree with Dr. Galván that many different stimuli can activate the brain's reward pathway, including social rewards from and comparison with others, which is exactly why social media can be addictive. In recognizing that the brain's reward pathway is activated by behaviors like eating food, getting money, and receiving social validation, Dr. Galvan is undermining her own argument when she says social media cannot be addictive.
- g. Further, fMRI studies show activation of the brain's reward pathway in response to specific addictive design features of social media, including that the reward pathway is more activated by posts and comments that have been “liked” by others (holding the content as a constant), as detailed in my Report.²⁴ By deploying a highly personalized and algorithmically tailored feed, social media ensures that each user receives “the stimuli that the individual person [finds] rewarding,” and not those they don't find rewarding.
- h. Dr. Kishida writes, “There is no reliable evidence that use of social media platforms engages the dopamine system in a pathologically ‘addictive’ manner.”²⁵ Dr. Pfeifer makes a similar claim, writing that there is no scientific evidence “that typical brain processes related to pleasurable everyday experiences mirror the

²³ Galván MDL Report at p.7.

²⁴ Izuma, K., Saito, D. N., & Sadato, N. (2008). Processing of social and monetary rewards in the human striatum. *Neuron*, 58(2), 284–294. <https://doi.org/10.1016/j.neuron.2008.03.020>; Sherman, L. E., Payton, A. A., Hernandez, L. M., Greenfield, P. M., & Dapretto, M. (2016). The Power of the Like in Adolescence: Effects of Peer Influence on Neural and Behavioral Responses to Social Media. *Psychological science*, 27(7), 1027–1035.

<https://doi.org/10.1177/0956797616645673>; Davey, C. G., Allen, N. B., Harrison, B. J., Dwyer, D. B., & Yücel, M. (2010). Being liked activates primary reward and midline self-related brain regions. *Human brain mapping*, 31(4), 660–668. <https://doi.org/10.1002/hbm.20895>; Kim, S. H., Baik, S. H., Park, C. S., Kim, S. J., Choi, S. W., & Kim, S. E. (2011). Reduced striatal dopamine D2 receptors in people with Internet addiction. *Neuroreport*, 22(8), 407–411. <https://doi.org/10.1097/WNR.0b013e328346e16e>; Flannery, J. S., Burnell, K., Kwon, S. J., Jorgensen, N. A., Prinstein, M. J., Lindquist, K. A., & Telzer, E. H. (2024). Developmental changes in brain function linked with addiction-like social media use two years later. *Social cognitive and affective neuroscience*, 19(1), nsae008. <https://doi.org/10.1093/scan/nsae008>.

²⁵ Kishida MDL Report, at p.4.

atypical processes underlying diagnosed substance use disorders (which, as Lembke concedes, *alter* typical brain processing).²⁶

- i. To the contrary, as explained in my Report, there is robust evidence that social validation, social connection, and other forms of social rewards, including through digital media, activate the brain's reward pathway and release dopamine, which, when combined with clinical observation and subjective experience, demonstrate sufficient biological plausibility for social media addiction.²⁷
- j. Dr. Tucker notes gambling disorder was included in the DSM-5 in 2013 but then makes the false claim that gambling disorder is different from social media addiction because gambling involves "the pursuit of rewards through chance, the belief that losses are temporary and will be recouped, and the lack of any positive communal benefits."²⁸
- k. Social media also includes the "pursuit of rewards through chance," including social rewards. The algorithms are a game of chance. Refreshing the browser, referred to in Defendants' documents as "pull-to-refresh,"²⁹ analogizes to slot machines.
- l. Social media can involve the "the belief that losses are temporary and will be recouped," such as likes, streaks, followers, and rankings. We have evidence that Defendants used these design features to optimize for time spent on the platform by encouraging users to chase these quantified social rewards and induce Fear of Missing Out (FOMO) when they weren't optimizing for these.³⁰
- m. Social media can also involve "lack of any positive communal benefits," when time online leads to harm to self and/or others. Use of these platforms for hours on end during school, during sleep time, etc., can hardly be said to contribute to the greater good.
- n. Dr. Kishida acknowledges the existence of gambling addiction, but not any other behavioral addiction.³¹ He distinguishes gambling addiction from other behavioral

²⁶ Expert Report of Jennifer Pfeifer, Ph.D., In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation, MDL No. 3047, July 9, 2025 (herein after "Pfeifer MDL Report"), at p. 23.

²⁷ Lembke MDL Report at p. 8-12.

²⁸ Tucker MDL Report at p. 7.

²⁹ META3047MDL-047-01167629 at META3047MDL-047-01167637.

³⁰ See GOOG-3047MDL-02009802, SNAP5486213 at SNAP5486214, GOOG-3047MDL-01268284 at *16 (produced natively), Alutaybi, A., Al-Thani, D., McAlaney, J., & Ali, R. (2020). Combating Fear of Missing Out (FoMO) on Social Media: The FoMO-R Method. International journal of environmental research and public health, 17(17), 6128. <https://doi.org/10.3390/ijerph17176128>.

³¹ Kishida MDL Report at p. 5.

addictions based on the loss of real money,³² which is not a necessary criterion for DSM diagnosis.³³

- o. Nonetheless, he does not seem to be aware that real money is being exchanged on these social media platforms and that one aspect of problematic/consequential use is monetary loss. See my opening report for several examples of this, including, “TikTok Live, real-time, livestreamed videos, allow for the exchange of monetary rewards for content creators from viewers, and for viewers from content creators. In response to the feature of vouchers for viewers who stay on the platform longer, TikTok’s internal documents note the risks for kids: “Concerned that since the vouchers are being used to incentivize uses [sic] to stay longer on lives this goes against some of our risks for minors.”³⁴ The gamblified nature of social media is part of what makes it addictive, especially its use of uncertain rewards and intermittent reinforcement.
- p. Dr. Kishida states, “There is no reliable scientific evidence that natural stimuli like that experienced through social media (i.e., sight, sound, and touch) lead to any of the same effects seen with the substances identified above. And that is for good reason. Each of the prior mentioned substances has direct, physical effect on the brain because it is ingested and therefore bypasses the neural circuitry in a way that external stimuli (like social media) cannot.”³⁵
- q. This suggests that Dr. Kishida doesn’t believe that people can get addicted to behaviors of any kind, including gambling, since we don’t ‘ingest’ gambling and since gambling, like social media and other addictive behaviors, ‘rely on sight, sound, and touch.’ Yet as he himself attests, gambling disorder is a well-researched, well-validated disorder, not to mention a growing public health problem with increased access to digital gambling platforms.³⁶

³² Kishida MDL Report at p. 64.

³³ American Psychiatric Association. (2022). Diagnostic and statistical manual of mental disorders (5th ed., text rev.). <https://doi.org/10.1176/appi.books.9780890425787>, at pp. 662-662.

³⁴ Deposition of Reagan Maher, February 21, 2025, In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), at 87:21-88:15, TIKTOK3047MDL-021-LARK-00005437-TIKTOK3047MDL-021-LARK-00005440, cited by Lembke MDL Report at p. 68.

³⁵ Kishida MDL Report at p. 26.

³⁶ Kishida MDL Report at p. 5.

3. I disagree that social media addiction is pathologizing normal/common behavior. Defendants' social media platforms have made social connection addictive through design features that promote ease of access, frictionless overabundance, high potency, high novelty, and uncertainty, thereby exploiting users need for social validation and connection, and turning a healthy behavior into an addictive one.

- a. Dr. Auerbach states, "Plaintiffs' experts imply that adolescents' desire to socialize online reflects a mental health disorder."³⁷ Similarly, Dr. Allen states that Plaintiffs' experts engage in "concept creep" by "attempts to label something addictive based on company documents reflecting that users might enjoy using the app or use it in a habitual way."³⁸ That is not at all what I or other experts are saying. The desire to socialize is healthy and innately human. Socializing online can be an extension of our healthy desire to connect. However, when social media is *druggified*, through the manipulation of addictive design features that promote ease of access, frictionless overabundance, high potency, high novelty, and uncertainty, as detailed in my report,³⁹ then something that is healthy is turned into something that is unhealthy for a substantial subset of users, especially kids.
 - i. Meta's Instagram well-being team reported that the company's "[p]roduct features" such as "likes, notification, the pull-down-to-see, the infinite scroll, etc." are "designed to exploit insecurity, or provide a dopamine rush" and "increase time spent" and "exploit[] weaknesses in the human psychology to promote product engagement and time spent"—all of which is "inherently at odds with well-being and take away from people's ability to consciously focus[] on activities that add value to their lives."⁴⁰
 - ii. Via an internal deck entitled "Teen Fundamentals," Meta's Instagram team specifically conducted research into the neuroscience and unique vulnerabilities of still-developing adolescent brains with the aim of adapting Instagram to take advantage of teens' unique psychology.⁴¹
 - iii. In another internal Instagram research document, Instagram researchers discussed focus groups held with teen Instagram users who reported "that they don't like the amount of time they spend on the app, but feel like they have to be present. They often feel 'addicted' and know that what they're seeing is bad for their mental health but feel unable to stop themselves."⁴²

³⁷ Rebuttal Report of Dr. Randy Auerbach to Personal Injury and School District Plaintiff's Experts, In Re: Social Media Adolescent Addiction/Personal Injury Products Litigation, MDL No. 3047, July 9, 2025 (herein after "Auerbach MDL Rebuttal Report), at p.8.

³⁸ Rebuttal Report of Prof. Nicholas Allen to Personal Injury and School District Plaintiff's Experts, In Re: Social Media Adolescent Addiction/Personal Injury Products Litigation, MDL No. 3047, July 9, 2025 (herein after "Allen MDL Rebuttal Report), at p.78.

³⁹ Lembke MDL Report.

⁴⁰ META3047MDL-044-00026817 at META3047MDL-044-00026826.

⁴¹ META3047MDL-003-00132740 at 00132741, 00132750-52, 00132761-62, 00132766, 00132787, 00132795, 00132797.

⁴² META3047MDL-019-00017593 at META3047MDL-019-00017595.

In that same document, Instagram researchers noted that teen Instagram users “have an addict’s narrative about their use -- it can make them feel good, feel bad. They wish they could spend less time caring about it, but they just can’t help themselves.”⁴³ And Instagram researchers added that teens also reported that they “recognize the amount of time they spend online isn’t good for them but at the same time know they lack the willpower to control the time spent themselves.”⁴⁴

- iv. A summer 2019 Instagram research presentation entitled “Teen Mental Health: Creatures of Habit” contained internal Instagram insights into consequences of Teen’s Instagram use. Researchers noted that “Instagram is addictive, and time-spend on platform is having a negative impact on mental health”, and that teens report “that without even thinking every time they pick up their phone, they automatically go to Instagram. They know they stay up later than they should and miss out on sleep to stay plugged in.”⁴⁵
 - v. Additionally, the Facebook (Meta) Empathy team internally reported that the “Known Negative Effects of FB and/or Social Media in General on Teens” due to “increased screen time” includes “sleep issues, which have long term negative effects on cognitive and physical development” and that “1/5 teens report waking up and checking social media in the middle of the night.”⁴⁶ Other reported negative effect included social pressures, body image concerns, fear of missing out (“FoMo”), depression, isolation, and anxiety.⁴⁷
- b. Dr. Allen states “Equating disappointment and frustration—both common emotions that apply to a wide variety of everyday experiences—with the clinical phenomena of craving and withdrawal makes neither scientific nor logical sense”⁴⁸ I disagree. These are characteristic emotions when a person is experiencing withdrawal. In the context of Snap streaks, as explained in my Report, “It is no surprise that Snapchat users feel ‘excited, positive, happy, etc’ when using Snapchat. They are experiencing the rewarding properties (the ‘high’) of the medium, which creates the conditions for the come-down or withdrawal, i.e. feeling depressed, irritable, and anxious, when they’re not using. The development of ‘anticipatory’ use hints at addiction and craving to follow.”⁴⁹
 - c. Dr. Allen states that “Plaintiffs’ experts conjecture that there *might* be a causal pathway, and that therefore social media features *might* be more attractive to

⁴³ META3047MDL-019-00017593 at META3047MDL-019-00017595.

⁴⁴ META3047MDL-019-00017593 at META3047MDL-019-00017595.

⁴⁵ META3047MDL-003-00091196 at META3047MDL-003-00091210.

⁴⁶ META3047MDL-044-00026817 at META3047MDL-044-00026818.

⁴⁷ META3047MDL-044-00026817 at META3047MDL-044-00026818.

⁴⁸ Allen MDL Rebuttal Report, at p. 77.

⁴⁹ Lembke MDL Report, at p. 49.

adolescents and *might* therefore be more likely to cause particular harms.”⁵⁰ This is not “conjecture” for the reasons explained in my Report.⁵¹ Furthermore, defense expert Dr. Auerbach’s summary of adolescent brain development highlights how teens are more socially oriented, more likely to take risks, how their limbic brain matures faster than the prefrontal cortex, and how social relationships engage and activate the reward circuitry: “This pursuit of social relationships engages reward-related brain activity (e.g., striatum) and the dopamine system (Kumar et al., 2019; Pagliaccio et al., 2023).”⁵² His description of adolescent brain development lays a solid foundation for how social media can be a drug that teens are more susceptible to than adults.

- d. Dr. Auerbach argues that the current approach to studying social media addiction through use of surveys “is exceedingly unreliable, as researchers have shown that reports of ‘addiction’ to ‘friends’ offline (i.e., in person) have similar prevalence rates or higher (e.g., Satchell et al 2021).”⁵³ This is a spurious distinction because being ‘addicted’ to friends offline is unlikely to compromise friendship, whereas social media addiction does, as well as contributing to loneliness, depression, and other mental health disorders, which Satchell’s survey⁵⁴ fails to assess. Moreover, Satchell et al. describe their research as “satirical” and note “[o]ne would hopefully recognize that conceptually (and indeed pragmatically) this measure is sardonic ... ‘[o]ffline friend addiction’ is not an issue of concern for public health”. Whereas social media addiction is a widely recognized concern for public health.⁵⁵

4. I disagree with Defendants’ experts that the scientific literature on social media addiction is insufficient or outweighed by the literature showing benefits of social media in youth. The totality of the evidence, based on my clinical experience, the medical literature, and importantly, the Defendants’ own internal documents, are more than sufficient to demonstrate the addictive and harmful nature of their products. Given the known risks, Defendants should warn adolescents and their parents about the addictive nature of their platforms.

- a. Defendants’ experts have claimed that Defendants’ internal documents do not constitute scientifically reliable evidence. Dr. Tucker claims “they are not peer-reviewed, are often anecdotal or incomplete, lack methodological rigor, are not

⁵⁰ Allen MDL Rebuttal Report, at p. 73.

⁵¹ Lembke MDL Report, at p. 12-22.

⁵² Auberbach MDL Rebuttal Report at p. 12.

⁵³ Auerbach MDL Rebuttal Report, at p. 8.

⁵⁴ Satchell, L. P., Fido, D., Harper, C. A., Shaw, H., Davidson, B., Ellis, D. A., Hart, C. M., Jalil, R., Bartoli, A. J., Kaye, L. K., Lancaster, G. L. J., & Pavetich, M. (2021). Development of an Offline-Friend Addiction Questionnaire (O-FAQ): Are most people really social addicts?. *Behavior research methods*, 53(3), 1097–1106. <https://doi.org/10.3758/s13428-020-01462-9>.

⁵⁵ Social Media and Youth Mental Health: The U.S. Surgeon General’s Advisory (2023); Thiagarajan, T. C., Newson, J. J., & Swaminathan, S. (2025). Protecting the Developing Mind in a Digital Age: A Global Policy Imperative. *Journal of Human Development and Capabilities*, 1–12, <https://doi.org/10.1080/19452829.2025.2518313>.

reproducible or independently verifiable, and frequently reflect business deliberations or strategy rather than objective scientific analysis.”⁵⁶ Dr. Auerbach claims, “Defendants’ Internal Documents Are Not Scientifically Reliable Evidence of Causation.”⁵⁷

- b. I disagree. As detailed in my report, Defendants’ internal studies are far from anecdotal, are often methodologically rigorous, and in some cases have been externally peer reviewed. If Defendants were willing to share their data with external researchers, which to my knowledge they have not been willing to do, their work could be independently verifiable. Defendants’ failure to make their data available for peer review should disqualify them from arguing that their studies are unreliable due to the absence of peer review. Indeed, independent scholars will welcome the opportunity to examine such materials, and undoubtedly will do so when the documents and data become available following public disclosure through trials in this litigation. Further, Defendants’ internal research hinges on specific use metrics designed to increase engagement regardless of content.
- c. Meta’s own internal research demonstrates compelling evidence of harm to youth based on addictive design features.
 - i. As discussed in my Report, Meta’s researchers, [REDACTED], [REDACTED] [REDACTED] and [REDACTED], performed an internal Facebook Study, “Understanding Perceptions of Problematic Facebook Use,” in which they paired “a survey of 20,000 Facebook users in the U.S. measuring perceived problematic Facebook use with server logs of aggregated behavioral data for the previous four weeks, such as the amount of time respondents spent on the site and counts of interactions with close friends.”⁵⁸ They found that 3.1% of U.S. Facebook users developed severe social media addiction.⁵⁹ An internal document reported this finding next to an additional finding from global data that 55% of Facebook users developed mild social media addiction.⁶⁰
 - ii. The U.S. survey used in “Understanding Perceptions of Problematic Facebook Use” consisted of the following questions “adapted from existing literature and questions from academia on Internet addiction and problematic use,”⁶¹ lending further credence to the idea that Meta’s

⁵⁶ Tucker MDL Report at p. 4.

⁵⁷ Auerbach MDL Rebuttal Report at p. 11.

⁵⁸ [REDACTED], & [REDACTED]. (2019). Understanding Perceptions of Problematic Facebook Use. Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems. <https://doi.org/10.1145/3290605.3300429>.

⁵⁹ [REDACTED], & [REDACTED]. (2019). Understanding Perceptions of Problematic Facebook Use. Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems. <https://doi.org/10.1145/3290605.3300429>, at p. 2; META3047MDL-053-00028484.

⁶⁰ META3047MDL-053-00028484.

⁶¹ META3047MDL-040-00078853.

definition of problematic use is synonymous with addictive use. Each question below was measured on a 4 or 5-point Likert scale, with cut-offs at 4 or 5 to signal “problematic use.”⁶² For example, reporting losing sleep “very often” or “always” was considered problematic.⁶³ Less than that was not.⁶⁴ For each person, they counted the number of questions where participants reported a problem.⁶⁵

- “How do you feel about how much time you spend on Facebook?”⁶⁶ This question gets at the C= out-of-control use diagnostic criterion for an addictive use disorder, with those reporting feeling dismayed about time spent on Facebook more likely to have an addiction.
- “How much control do you feel you have over the amount of time you spend on Facebook?”⁶⁷ This question addresses the C=out-of-control use directly, eliminating any ambiguity about what might be meant by feeling badly about time spent.
- “Overall, do you feel like Facebook has had a positive or negative impact in your life?”⁶⁸ This question gets right to the heart of C=consequences related to Facebook use, another diagnostic criterion for an addictive use disorder.
- “How often, if ever, do you try to reduce use of Facebook?”⁶⁹ This question gets at the C=compulsions diagnostic criterion, that is the loss of agency in addiction, where the individual is using more than they want to.
- How often do you get less sleep than you want because you're using Facebook?”⁷⁰ This question gets at the C=consequences criterion for diagnosing an addictive use disorder.
- “Overall, how much does your use of Facebook hurt your relationships with others?”⁷¹ This question gets at the C=consequences criterion for diagnosing an addictive use disorder.

⁶² META3047MDL-040-00078853 at META3047MDL-040-00078854.

⁶³ META3047MDL-040-00078853 at META3047MDL-040-00078854.

⁶⁴ META3047MDL-040-00078853 at META3047MDL-040-00078854.

⁶⁵ META3047MDL-040-00078853 at META3047MDL-040-00078854.

⁶⁶ META3047MDL-040-00078853.

⁶⁷ META3047MDL-040-00078853.

⁶⁸ META3047MDL-040-00078853.

⁶⁹ META3047MDL-040-00078853.

⁷⁰ META3047MDL-040-00078853.

⁷¹ META3047MDL-040-00078853.

- “To what extent does Facebook help or hurt your work or school performance?”⁷² This question gets at the C=consequences criterion for diagnosing an addictive use disorder.

- “How concerned are you about missing important posts on Facebook if you don't log in frequently enough?”⁷³ This question gets at the C=craving diagnostic criterion, describing states of wanting the drug when not using.

iii. The [REDACTED] et al “Understanding Perceptions of Problematic Facebook Use” study was submitted to “ACM CHI2019.” Importantly, Meta/[REDACTED] misleadingly presented the figure of 3.1% as an “upper bound”.⁷⁴ As noted above, addiction is a spectrum disorder, and it is highly relevant for researchers to disclose the full range of their findings, regardless of whether the term used is “addiction” or the functional equivalent of “problematic use”. By failing to disclose the prevalence of mild and moderate “problematic use,” Meta/[REDACTED] presented an incomplete and unduly favorable characterization of the data. This presentation is all the more troubling in light of Meta's internal documents showing a prevalence of 55% with mild or greater problematic use in a different population.⁷⁵ The study was peer reviewed by two external reviewers⁷⁶ and the authors were provided with extensive commentary and feedback.⁷⁷ Feedback from one of the external reviewers included the following:

“The interpretation of people viewing friends' profiles as seeking connection seems overly positive to me. My interpretation of this would be related to social comparison, or colloquially ('Facebook stalking') which both seem more likely to be associated with problematic behaviors than seeking connection. I'd like to see a more multi-faceted and balanced interpretation of these kinds of data.”⁷⁸

iv. In other words, this external reviewer directly called out the overly rosy interpretation of these data and identified the time spent viewing profiles as part of a potentially harmful feedback loop.

⁷² META3047MDL-040-00078853.

⁷³ META3047MDL-040-00078853.

⁷⁴ [REDACTED], & [REDACTED] (2019). Understanding Perceptions of Problematic Facebook Use. Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems. <https://doi.org/10.1145/3290605.3300429>.

⁷⁵ META3047MDL-053-00028484; META3047MDL-044-00020409 at -20429.

⁷⁶ META3047MDL-040-00079907 at META3047MDL-040-00079912.

⁷⁷ META3047MDL-040-00079907 at META3047MDL-040-00079912.

⁷⁸ META3047MDL-040-00079907 at META3047MDL-040-00079915.

- v. The [REDACTED] et al “Understanding Perceptions of Problematic Facebook Use” study was published in CHI Conference on Human Factors in Computing Systems Proceedings,⁷⁹ underscoring that Meta’s [REDACTED] et al “Understanding Perceptions of Problematic Facebook Use” study was founded on meaningful data and peer reviewed.
- vi. Meta internal documents further show that the [REDACTED] et al study was part of a larger body of research conducted by Facebook (Meta) on the impact of their products on well-being, including extensive reviews of the medical literature and consultation with experts in the field.⁸⁰ Meta’s “well-being findings have been presented at the H2 2017 Company All-Hands, earning calls, and before Congress.”⁸¹
- vii. Using the same data from the U.S. survey used in “Understanding Perceptions of Problematic Facebook Use,” in another study, [REDACTED] and colleagues “divided participants into two groups: (1) Those reporting two or more problematic use cases, and (2) those who don’t [report two or more problematic use cases],” and compared their demographics and activities on Facebook.⁸² The study found that 13% of respondents reported fell into the first problematic use category (which the study denominated as “problematic users”), and 36% of respondents reported fell into the second category.⁸³
- viii. [REDACTED] and colleagues’ work focused on users’ interaction with the products over content. They found that the 13% considered problematic users “spend more time on the site (42 vs. 36 hours in a month)[;] receive more notifications and respond to them more quickly[;] have more sessions and log in to FB at a wider variety of times of day[;] are more likely to deactivate (and reactivate).”⁸⁴
- ix. [REDACTED] and colleagues found that youth consumers are the most vulnerable to social media addiction: “Teens and people in their 20s are the most likely to report problematic use.”⁸⁵
- x. An October 2019 document discussing “Facebook’s Measurement Strategy for Problematic use” noted: “We have a survey to detect problematic use that is deeply rooted in external academic as well as internal quantitative and qualitative user experience research;” and “We

⁷⁹ [REDACTED], & [REDACTED] (2019). Understanding Perceptions of Problematic Facebook Use. Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems. <https://doi.org/10.1145/3290605.3300429>.

⁸⁰ META3047MDL-040-00078853 at META3047MDL-040-00078861.

⁸¹ META3047MDL-040-00078853.

⁸² META3047MDL-040-00078853 at META3047MDL-040-00078854.

⁸³ META3047MDL-040-00078853 at META3047MDL-040-00078854.

⁸⁴ META3047MDL-040-00078853 at META3047MDL-040-00078854.

⁸⁵ META3047MDL-040-00078853 at META3047MDL-040-00078854.

- have broken down problematic use sub-areas into time-related and content-related issues, thus making it easier to move these issues, which likely have different product solutions separately.”⁸⁶
- xi. Meta’s framing of problematic use was applied to Instagram as well, and Meta’s researchers exchanged and cross-pollinated research on Facebook to similar research conducted on Instagram.
 - xii. This exchange between Facebook and Instagram Meta employees illustrates how [REDACTED] et al’s work was used to inform studies of Instagram users: “[REDACTED] (10/26/2021 11:55:07 PDT): >btw, do we have a specific definition for problematic social media use?[:]”
[REDACTED] (10/26/2021 13:33:53 PDT): >We defined one in a paper: <https://research.fb.com/publications/understanding-perceptions-of-problematic-facebook-use/> (for FB)”[:]”
[REDACTED] (10/26/2021 14:48:50 PDT): >Central has a paper too. I can pull these for you”.⁸⁷
- d. TikTok’s own internal research demonstrates compelling evidence of harm to youth based on interactive design features, regardless of content.
- i. “Internal TikTok documents reveal that TikTok deployed its own metric for excessive (likely addictive) use, which they call ‘unbalanced’ use based on their ‘Balance Engagement Index.’”⁸⁸
 - ii. “TikTok’s Balance Engagement Index (BEI) is equal to ‘1- Unbalanced Engagement Rate,’ where unbalanced engagement rate is measured in different ways, including time spent on the platform.”⁸⁹
 - iii. “TikTok’s research reveals that 40.5% of minors “hit the excessive duration limit and 22% of them hit the night duration limit,” where “Excessive users are users who continuously use TikTok for more than 80 mins at day or more than 60 mins at night.” TikTok refers to these individuals as “binge users,” borrowing from the language of addiction, where a ‘binge drinker’ is someone who uses large quantities of alcohol within a discrete period of time.”⁹⁰

⁸⁶ META3047MDL-047-00361907.

⁸⁷ META3047MDL-003-00079563 at META3047MDL-003-00079564.

⁸⁸ TIKTOK3047MDL-197-04799946, cited by Lembke MDL Report at p.70 .

⁸⁹ TIKTOK3047MDL-197-04799946 at TIKTOK3047MDL-197-04799948, cited by Lembke MDL Report at p. 71

⁹⁰ TIKTOK3047MDL-197-04799946 at TIKTOK3047MDL-197-04799949, TIKTOK3047MDL-197-047999451, Deposition of Jordan Furlong, Volume II, April 12, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), at 441:19-442:16, cited by Lembke MDL Report at p.71.

- iv. “TikTok’s research found that 6.95% of active minors at nighttime are excessive users, and 4.18% of active minors at daytime are excessive users, which translates to 900,000 teens using TikTok excessively at nighttime (6.95% of 13 million), and 500,000 during the day (4.18% of 13 million).”⁹¹
- e. Dr. Tucker writes, “In my opinion, the amount of time spent ‘on the platform’ is unlikely to be an appropriate metric to link YouTube or any social media use to psychiatric disorders, since time spent on YouTube and other platforms often involves healthy or productive activities (Cui et al. 2024; Marciano and Viswanath 2023; Pew 2015; Pires 2021; Rosic et al. 2022).”⁹²
- f. I disagree. Although we do not diagnose social media addiction based on time alone, time spent on social media is an important risk factor for addiction: The more time spent on social media, the higher the risk of harm, including the risk of addiction.⁹³
- g. A survey by the Pew Research Center, “Teens, Social Media and Technology 2024,” shows that nearly half of teens say they’re online “almost constantly,”⁹⁴ and when asked what they’re doing online, teens listed Defendants’ platforms in the top four, with YouTube topping the list, followed by TikTok, Instagram, and Snapchat.⁹⁵
- h. Defendants’ own internal data show excessive and binge use of their platforms, especially among kids,⁹⁶ with a clear link between excessive use, addictive use, and mental health harms, as detailed in my Report⁹⁷, and here:
 - i. Meta’s own researchers found that “...measures of time spent also correlate positively with increased problematic use. People reporting problematic use are on Facebook at a wider variety of times in the day (even after controlling for time spent), and also open Facebook more

⁹¹ TIKTOK3047MDL-197-04799946 at TIKTOK3047MDL-197-04799949, Deposition of Jordan Furlong, Volume II, April 12, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), at 442:17-443:1, OJJDP Statistical Briefing Book. Online. Available: <https://ojjdp.ojp.gov/statistical-briefing-book/population/faqs/QA01104>. Released on 10/13/2021, Faverio, M., Sidoti, O., & Pew Research Center. (2024). Teens, Social Media and Technology 2024. In Pew Research Center. <https://www.pewresearch.org>, at p. 3, cited by Lembke MDL Report at p.71.

⁹² Tucker MDL Report at p. 17.

⁹³ Lembke MDL Report at p. 82-83.

⁹⁴ Faverio, M., Sidoti, O. (2024). Teens, Social Media and Technology 2024, Pew Research Center, <https://www.pewresearch.org/internet/2024/12/12/teens-social-media-and-technology-2024>, at p. 3; Faverio (2025). 10 facts about teens and social media, <https://www.pewresearch.org/short-reads/2025/07/10/10-facts-about-teens-and-social-media/>.

⁹⁵ Faverio, M., Sidoti, O. (2024). Teens, Social Media and Technology 2024, Pew Research Center, <https://www.pewresearch.org/internet/2024/12/12/teens-social-media-and-technology-2024>, at p. 3.

⁹⁶ See Lembke MDL Report at pp. 36-39, 53-54, 60-61, 69-71.

⁹⁷ See Lembke MDL Report at pp. 78-86.

- frequently (i.e. having a greater number of sessions or periods of continuous use.)”⁹⁸
- ii. Meta’s researchers concluded, “People with problematic use (those who report two or more problematic use cases) do spend more time on Facebook ~42 hours in the past 28 days vs. ~35 hours).”⁹⁹ And “On average, people spent 28% more time on Instagram as well. Notably, people who report that their use of Facebook is problematic tend to spend a larger fraction of time using Instagram (if they are also on Instagram).”¹⁰⁰
 - iii. “Is problematic use simply a factor of using Facebook too long?,” Meta researchers responded, “Not quite.... People who spend the least amount of time on Facebook (< 9 hours per month) also report problematic use at a substantial rate,” noting that it’s how they use Meta’s platforms that matters most, although time spent is clearly a risk factor.¹⁰¹
 - iv. YouTube began receiving negative user feedback regarding the addictive nature of YouTube Shorts and the negative impact of YouTube Shorts on a user’s mental health immediately after the product was launched.¹⁰² Such complaints and requests for the ability to turn off Shorts have been persistent over time, and include complaints that Shorts are addictive, reduce attention span, cause headache and anxiety, lead to wasted time on endless scrolling, are “toxic and harmful,”¹⁰³ and distract from studying.¹⁰⁴ As one user explained, “I’ve become addicted to your shorts and I feel useless. I want to die.”¹⁰⁵

⁹⁸ META3047MDL-040-00078853 at META3047MDL-040-00078856-78857.

⁹⁹ META3047MDL-019-00032957 to META3047MDL-019-00032958.

¹⁰⁰ META3047MDL-019-00032957 to META3047MDL-019-00032958.

¹⁰¹ META3047MDL-019-00032957 to META3047MDL-019-00032958.

¹⁰² Deposition of Genoveva Descalzo (Rough), July 18, 2025, In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047) at 56:19-57:5, 65:12-66:6, 68:7-69:9; 70:8-71:5; Exhibit. 3 (GOOG-3047MDL-0087048), Exhibit 5 (GOOG-3047MDL-01256238, tab “India Teams Sorted Feedback” at cell C22849), Exhibit 6, (GOOG-3047MDL-01259508, tab “Pulse feedbackneutron-report_20” at cell C11213), Exhibit 7 (GOOG-3047MDL-03971647, tab “Discovery Feedback” at cell D9467).

¹⁰³ Deposition of Connor Barrett (Rough), July 17, 2025, In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Exhibit 9 (GOOG-3047MDL-024402080, tab “Nov 24 2023 – Feb 21 2024” at cell A64)

¹⁰⁴ See e.g. Deposition of Connor Barrett (Rough), July 17, 2025, In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), at 104:23-133:17, 155:5-21; Exhibit. 8 (GOOG-3047MDL-02889060 at cell D56), Exhibit 9 (GOOG-3047MDL-024402080, tab “Nov 24 2023 – Feb 21 2024” at cells A10, A40, A64, A70, A178, A180, A213, A256, A294, A344, A366), Exhibit 10 (GOOG-3047MDL-05997412 at cells B41, B201, B317, B353, B382), Exhibit 13 (GOOG-3047MDL-05960976 at cell BB634).

¹⁰⁵ Deposition of Connor Barrett (Rough), July 17, 2025, In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), at 122:19-24; Exhibit 9 (GOOG-3047MDL-024402080, tab “Nov 24 2023 – Feb 21 2024” at cell A294).

- v. User requests for the ability to remove or disable YouTube Shorts from a user's feed was a Top User Issue across YouTube in 2023.¹⁰⁶
 - vi. Moreover, SupeX parent requests for the ability to remove or disable Shorts represented was the number one Youth Issue in the second and third quart of 2023, representing 13.5% of youth feedback (9,900 reports).¹⁰⁷ Such requests were not based on specific content but on the effect shorts had on children's attention spans and habits.¹⁰⁸ Nonetheless, YouTube has not provided users with the ability to completely remove or turn off YouTube Shorts.¹⁰⁹
 - vii. A deep dive into teen feedback on YouTube Shorts, found that 15.9% of all teen users requesting the ability to turn off YouTube Shorts did so on the basis that they found Shorts to be addictive and distracting, representing one-third of teen users providing a reason for the request.¹¹⁰ The leading concerns were that Shorts interfered with studying, wasted time, and caused unhealthy use of YouTube.¹¹¹
- i. Dr. Kishida writes, "I am not aware of any study that seeks to evaluate whether social media is potentially addictive irrespective of content."¹¹² But many studies looking at social media addiction find that the addictive design features of Defendants' products are at the core of their addictive potential, regardless of content. An example is Shakya and Christakis (2017) discussed in my Report.¹¹³
 - i. A just published study by Xiao et al investigated addictive screen use specifically and its impact on suicidality.¹¹⁴ The study followed nearly 4,300 U.S. children, starting at age 9–10, over a period of four years.

¹⁰⁶ Deposition of Genoveva Descalzo (Rough), July 18, 2025, In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), at 61:11-63:8; Exhibit. 4 (GOOG-3047MDL-03080564 at GOOG-3047MDL-03080577).

¹⁰⁷ Deposition of Connor Barrett (Rough), July 17, 2025, In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), at 80:25-83:6, Exhibit 5 (GOOG-3047MDL-00809552 at *12, produced natively)

¹⁰⁸ Deposition of Connor Barrett (Rough), July 17, 2025, In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), at 85:6-86:21.

¹⁰⁹ Deposition of Connor Barrett (Rough), July 17, 2025, In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), at 90:16-91:10.

¹¹⁰ Deposition of Connor Barrett (Rough), July 17, 2025, In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), at 91:25-94:3, Exhibit. 6 (GOOG-3047MDL-02938010 at *7, produced natively)

¹¹¹ Deposition of Connor Barrett (Rough), July 17, 2025, In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), at 94:4-14; 99:9 -22, Exhibit. 6 (GOOG-3047MDL-02938010 at *9, *12, produced natively)

¹¹² Kishida MDL Report at p. 6.

¹¹³ Lembke MDL Report at p. 25-26.

¹¹⁴ Xiao, Y., Meng, Y., Brown, T. T., Keyes, K. M., & Mann, J. J. (2025). Addictive Screen Use Trajectories and Suicidal Behaviors, Suicidal Ideation, and Mental Health in US Youths. *JAMA*, e257829. Advance online publication. <https://doi.org/10.1001/jama.2025.7829>.

Instead of measuring total screen time, they tracked patterns of addictive use—like compulsive checking, distress when separated from devices, and using screens to escape.¹¹⁵

- ii. The authors found that addictive usage is common, around ~30% with social media.¹¹⁶ Youth with high or rising addictive use were 2–3 times likelier to report suicidal thoughts or behaviors than those with low, stable use.¹¹⁷ These youth also had more symptoms of depression, anxiety, aggression, and attention problems.¹¹⁸
 - iii. In this study, the adverse impacts of digital media including social media were not about “screen time” alone but also other patterns of addictive use.¹¹⁹
- j. Dr. Auerbach states an objection to time use surveys as a marker of problematic use, “It is well documented that youth do not accurately recall time spent on social media, typically vastly inflating the total time (e.g., Ellis, 2019). Moreover, total time spent online does not in any way reflect the nuanced way that youth interact with social media (e.g., scrolling, posting, watching videos, reading, etc.).”¹²⁰
- i. The Ellis article,¹²¹ to which Auerbach refers, does not state that people over-estimate the time spent on social media platforms. Importantly, the data in Table 3 does not provide information on whether the lack of correlation is due to overestimation of use time, underestimation of use time, or both.

¹¹⁵ Xiao, Y., Meng, Y., Brown, T. T., Keyes, K. M., & Mann, J. J. (2025). Addictive Screen Use Trajectories and Suicidal Behaviors, Suicidal Ideation, and Mental Health in US Youths. *JAMA*, e257829. Advance online publication. <https://doi.org/10.1001/jama.2025.7829>, at pp. E2-E3.

¹¹⁶ Xiao, Y., Meng, Y., Brown, T. T., Keyes, K. M., & Mann, J. J. (2025). Addictive Screen Use Trajectories and Suicidal Behaviors, Suicidal Ideation, and Mental Health in US Youths. *JAMA*, e257829. Advance online publication. <https://doi.org/10.1001/jama.2025.7829>, at p. E5.

¹¹⁷ Xiao, Y., Meng, Y., Brown, T. T., Keyes, K. M., & Mann, J. J. (2025). Addictive Screen Use Trajectories and Suicidal Behaviors, Suicidal Ideation, and Mental Health in US Youths. *JAMA*, e257829. Advance online publication. <https://doi.org/10.1001/jama.2025.7829>, at pp. E2-E3.

¹¹⁸ Xiao, Y., Meng, Y., Brown, T. T., Keyes, K. M., & Mann, J. J. (2025). Addictive Screen Use Trajectories and Suicidal Behaviors, Suicidal Ideation, and Mental Health in US Youths. *JAMA*, e257829. Advance online publication. <https://doi.org/10.1001/jama.2025.7829>, at pp. E2-E3.

¹¹⁹ Xiao, Y., Meng, Y., Brown, T. T., Keyes, K. M., & Mann, J. J. (2025). Addictive Screen Use Trajectories and Suicidal Behaviors, Suicidal Ideation, and Mental Health in US Youths. *JAMA*, e257829. Advance online publication. <https://doi.org/10.1001/jama.2025.7829>, at p. E5.

¹²⁰ Auerbach MDL Rebuttal Report, at p. 9.

¹²¹ Ellis, D. A., Davidson, B. I., Shaw, H., & Geyer, K. (2019). Do smartphone usage scales predict behavior? *International Journal of Human-Computer Studies*, 130, 86–92.

- ii. Regardless, in my clinical experience, those with addiction, including those with social media addiction, tend to *underestimate* both time spent and adverse consequences.
- k. Dr. Tucker writes, “... this newly defined condition has brought with it significant and fundamental concerns regarding the distinction between high involvement versus pathological involvement in video games, since intense video game playing often involves patterns of gaming that are characterized by high involvement but that are non-pathological.”¹²²
 - i. As with alcohol, social media use likely often displays a “J-shaped curve” wherein moderate use may have no negative impact on health, while excessive use is bad.¹²³ Other addictive substances and behaviors can be salutary in moderation and bad in excess, not just social media.
 - ii. As with alcohol or any other substance, we make the diagnosis of a use disorder/addiction not solely on quantity or frequency, but on the “4 C’s”, that is to say, the maladaptive patterns of use, with or without tolerance and withdrawal. As such, there is no conflict or discrepancy here between current definitions of social media addiction and other forms of addiction. Current measures of social media addiction are easily adapted from existing definitions of addiction.
- l. Dr. Tucker writes, “YouTube has become an important tool for teaching and learning, including academic work (homework, school assignments, attending seminars or online classes, online research) as well as occupational work (e.g., job-seeking and online training or research for a summer job or internship) (Clayborne et al. 2025; Maziriri 2020; Orús 2016; Pratama 2020; Schaper 2014; Shen 2023; Smith 2010).”¹²⁴ Google’s own internal documents show that YouTube interferes with learning, as detailed in my opening report, and many schools have blocked access to YouTube.¹²⁵
- m. Dr. Tucker writes, “Another major problem with the idea of ‘social media addiction’ is that maladaptive use of social media may be a symptom of another underlying, recognized disorder. For example, psychiatric and behavioral disorders have emerged as potential predictors of ‘problematic use’ of the internet (PUI), indicating the likelihood that in many cases, adolescent mental health problems may be primary and PUI secondary, rather than PUI being primary and mental health problems being secondary (Kardefelt-Winther 2014).”¹²⁶

¹²² Tucker MDL Report, at p. 8.

¹²³ Twenge, J.M., & Campbell, W.K. (2019). Media Use Is Linked to Lower Psychological Well-Being: Evidence from Three Datasets. *Psychiatric Quarterly*, 90(2), 311-331. <https://doi/10.1007/s11126-019-09630-7>.

¹²⁴ Tucker MDL Report at p. 16.

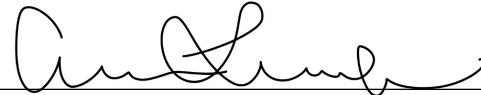
¹²⁵ GOOG-3047MDL-00874191 at *28 (produced natively); GOOG-3047MDL-00665175 at *4 (produced natively).

¹²⁶ Tucker MDL Report at p. 9.

- i. The presence of another underlying psychiatric disorder does not contradict the idea of social media addiction or the harm it can cause to mental health. Kids with mental health disorders are more vulnerable to social media addiction and are also more likely to experience adverse psychiatric symptoms as a result of social media addiction. Just as with other addictions, social media addiction can exacerbate mental health disorders and vice versa in a feed-forward cycle.¹²⁷
 - ii. Even where social media addiction is secondary to a pre-existing mental illness, it's still a harm of Defendants' products.
- n. Given the known potential for harm of social media to youth, Defendants should warn youth consumers and their parents about the risks, which include but are not limited to addiction, depression, and suicidal ideation.

The undersigned hereby certifies their understanding that they owe a primary and overriding duty of candor and professional integrity to help the Court on matters within their expertise and in all submissions to, or testimony before, the Court. The undersigned further certifies that their report and opinions are not being presented for any improper purpose, such as to harass, cause unnecessary delay, or needlessly increase the cost of litigation.

Executed on: July 30, 2025



Anna Lembke, M.D.

¹²⁷ Lembke MDL Report at p. 84-85.

Anna Lembke, M.D. Report

EXHIBIT A

Curriculum Vitae

Anna Lembke, M.D.
Professor of Psychiatry and Behavioral Sciences
Medical Director of Addiction Medicine
Stanford University School of Medicine
Department of Psychiatry and Behavioral Sciences
401 Quarry Road, Stanford, CA, 94305
Office: 650 725-9570 Fax: 650 725-8048
alembke@stanford.edu

Education and Training

- 1985-1989 Yale University (BA, Humanities; *summa cum laude*)
New Haven, CT
- 1989-1990 University of Beijing (Mandarin Chinese)
Beijing, China
- 1992-1995 Stanford University School of Medicine (MD)
Stanford, CA
- 1995-1997 Residency, Pathology
Stanford University School of Medicine, Stanford, CA
- 1997-1998 Internship, Internal Medicine
Highland Hospital, Alameda, CA
- 1998-2000 Residency, Psychiatry
Stanford University School of Medicine, Stanford, CA
- 2000-2002 Fellowship in Mood Disorders, Psychiatry and Behavioral Sciences
Stanford University School of Medicine, Stanford, CA

Honors and Awards

- 1989 *Summa cum laude* in Humanities
Yale University
- 1989 Outstanding Contributor to Community Life
Yale University
- 1989 Yale-China Fellowship
Yale University
- 1995 Outstanding Teacher in Structural Biology
Stanford University School of Medicine

1999	Outstanding Research in Severe Mental Illness Janssen Scholar
2000	Travel Scholarship Medical Education and Research Foundation (MERF)
2000	Outstanding Research in Severe Mental Illness American Psychiatric Association
2002	Laughlin Fellowship American College of Psychiatrists
2009	Travel Scholarship Alcohol Medical Scholars Program
2011	Travel Scholarship Association of Medical Education, Research, Substance Abuse
2013	Faculty Fellowship Stanford University School of Medicine
2014	Excellence in Academic Teaching Stanford University School of Medicine
2015	Chairman's Clinical Innovation Award Stanford University School of Medicine
2017	Distinguished Visiting Professorship Johns Hopkins Bayview, Department of Internal Medicine
2018	Distinguished Flexner's Dean Lecturer Vanderbilt University School of Medicine
2018	Distinguished Marcel Malden Lecturer Tacoma, Washington
2018	Distinguished Alpha Omega Alpha Visiting Professorship University of Kansas School of Medicine
2018	Distinguished Alumni Award Evanston Township High School, Evanston, IL
2018	Excellence in Academic Teaching Award Stanford University School of Medicine

- 2019 Distinguished Baldwin Lecturer
The Accreditation Council for Graduate Medical Education (ACGME)
- 2019 Distinguished Tector Lecturer
69th Annual Course for Family Physicians, Montreal, Canada
- 2019 Distinguished James Platt White Memorial Lecturer
Buffalo, New York OB/GYN Society
- 2019 Distinguished Crowley Lecturer
Lucile Packard Children's Hospital, Stanford University
- 2019 Distinguished University of Tampa Honors Symposium Lecturer
University of Tampa, Florida
- 2019 Distinguished Evelyn G. Keever Bioethics Day Lecturer
Eastern Virginia Medical School
- 2020 Fellowship Training Directors Award
American Society of Addiction Medicine
- 2020 Irma Bland MD Certificate of Excellence in Teaching Residents
American Psychiatric Association
- 2021 Distinguished Alpha Omega Alpha Visiting Professorship
University of Nevada, Reno School of Medicine
- 2021 Hazelden Betty Ford Foundation Humanitarian Award
Hazelden Betty Ford Foundation, Rancho Mirage, California
- 2022 Chairman's Polymath Award
Stanford University School of Medicine
- 2022 Distinguished Freedman Memorial Lecturer
University of Chicago
- 2022 Distinguished Callahan Lecturer
Case Western Reserve University
- 2023 Distinguished Reeves Warm MD Lecturer
University Hospitals, Cleveland, Ohio
- 2023 38th Distinguished Feldman Lecturer
Edmonton, Alberta, Canada

Academic and Clinical Appointments, Stanford University

- 2003-2010 Instructor Department
Department of Psychiatry and Behavioral Sciences (9/03-4/10)
- 2010-2017 Assistant Professor
Department of Psychiatry and Behavioral Sciences (5/10-4/17)
- 2012-present Chief, Addiction Medicine Dual Diagnosis Clinic
Department of Psychiatry and Behavioral Sciences
- 2013-2018 Founding Program Director, Addiction Medicine Fellowship
Department of Psychiatry and Behavioral Sciences
Accredited by the American Board of Addiction Medicine
- 2018-present Founding Program Director, Addiction Medicine Fellowship
Department of Psychiatry and Behavioral Sciences
Accredited by ACGME
- 2016-2021 Courtesy Appointment
Department of Anesthesiology and Pain Medicine
- 2017-present Medical Director, Addiction Medicine
Stanford Health Care and Stanford University Hospital
- 2017-2021 Associate Professor
Department of Psychiatry and Behavioral Sciences (7/17-6/21)
- 2020-present Director, Taube Youth Addiction Initiative
Department of Psychiatry and Behavioral Sciences
- 2021-present Professor
Department of Psychiatry and Behavioral Sciences

Other Previous Employment

- 1991-1992 Bilingual Teacher (grades K-8), State Certified in Chinese (Mandarin)
Healy Elementary School, Chicago, IL
- 1989-1990 English Teacher, Yali Middle School
Changsha, China

Medical Licensure and Specialty Board Certification

- 1995 California medical license #A62241

- 2003 Diplomate, American Board of Psychiatry and Neurology
Certificate #51988; recertified 2/18/2013
- 2012 Diplomate, American Board of Addiction Medicine
Certificate #2012288; certified 12/15/2012 -12/31/2022
- 2013 DEA-X waivered to prescribe buprenorphine products
- 2021 Diplomate, American Board of Preventive Medicine; Certificate #61-17111; certified 01/01/2021 - Exp date 12/31/2030

Educational Leadership, Stanford University

- 2003-2005 Chair, Curriculum Committee
Department of Psychiatry and Behavioral Sciences
Stanford University School of Medicine
- 2009-present Course Director, CME-accredited monthly Stanford seminar series for community physicians - “Closing the Gap: Moving towards Best Practices in Psychiatry”
- 2012-2014 Principal Organizer and Lecturer of the free Buprenorphine Certification Course and CURES registration for Stanford University
- 2013-present Program Director, Addiction Medicine Fellowship
Department of Psychiatry and Behavioral Sciences
Stanford University School of Medicine
- 2014 Expert Consultant, Alcohol and Women Task Force
Office of the Vice Provost for Student Affairs, Stanford University
- 2014-2016 Annual Medical Student Town Hall Meetings on Wellness and Professionalism (Issues of Substance Use and Addiction)
Office of the Dean of the School of Medicine, Stanford University
- 2015-2016 Expert Consultant, Alcohol and Other Drug (AOD) Subcommittee of the Mental Health and Well-Being Advisory Committee
Stanford University
- 2016-2024 Chair, Addiction Medicine Task Force
Stanford University School of Medicine
(Goal: create a new curriculum for addiction/safe opioid prescribing)
- 2017-2022 Committee on Professionalism
Stanford University School of Medicine

2021-present Collegiate Recovery Advisory Committee
Stanford University

Teaching and Mentoring, Stanford University

2002-present Course Director, Addiction Medicine, Stanford University School of Medicine

2009-present Course Director, Stanford CME series “Closing the Gap in Psychiatry”

2012-present Course Lecturer, Substance Use Disorders, Stanford Child Psychiatry Fellowship

2012-2020 Course Lecturer, Substance Use Disorders, Stanford Palliative Care Fellowship

2012/14/’16 Biennial lecture on addiction medicine to Stanford undergraduates as part of the Hum Bio Molecular and Cellular Physiology 256 seminar

2021-present Course Lecturer on Addiction, Stanford undergraduate Psychology 101

Clinical Supervision (weekly year round), Stanford University

2002-2018 Inpatient Psychiatry Med Students, Residents, Fellows

2010-present Addiction Med/Dual Dx Clinic Med Students, Residents, Fellows

2013-2018 Pain and Addiction Clinic Pain Fellows

Addiction Medicine Fellowship, Director, Stanford University

2013-14 Stacie Solt, MD, Emergency Medical and Addiction Medicine, now at San Mateo Medical Center, San Mateo, CA

2014-15 Mitika Kanabar, MD, Family Medicine Physician and Addiction Medicine, now at Southern California Permanente Medical Group, Lancaster, CA

2015-16 Chinyere Ogbonna, MD, Family Medicine, Psychiatry, and Addiction Medicine, now Medical Director of Chemical Dependency Services at Kaiser Permanente, San Jose, CA

2016-17 Rachel Sussman, MD, Family Medicine and Addiction Medicine, now Assistant Professor at Stanford School of Medicine and Indian Health Center/O’Connor, San Jose, CA

- 2017-18 Amer Raheemullah, MD, Internal Medicine and Addiction Medicine, now Assistant Professor and Director of the Inpatient Addiction Medicine Consult Service at Stanford School of Medicine, Stanford, CA
- 2017-18 Anusha Chandrakanthan, MD, Family Medicine and Addiction Medicine, now Adjunct Clinical Assistant Professor in Addiction Medicine at Stanford University School of Medicine, Stanford, CA, and Staff Physician at Valley Homeless Health, San Jose, CA
- 2018-19 Huiqiong Deng, MD, PhD, Psychiatry and Addiction Medicine, now Assistant Professor in Addiction Medicine at Stanford University School of Medicine, Stanford, CA
- 2018-19 Michael Polignano, MD, Psychiatry and Addiction Medicine, now Assistant Professor in Addiction Medicine at Stanford University School of Medicine, Stanford, CA
- 2019-20 Ori Benhamou, MD, Psychiatry and Addiction Medicine, Stanford Addiction Medicine Fellowship, Stanford, CA
- 2019-20 Nathaniel Lepp, MD, Family Medicine and Addiction Medicine, Stanford Addiction Medicine Fellowship, Stanford, CA
- 2020-2021 Matilde Fredrickson, DO, Warren Yamashita, MD, Stanford Addiction Medicine Fellowship, Stanford, CA
- 2021-2022 Hussain Abdullah, MD, Thomas Bottyan, MD, Sara Cohen-Fournier, MD Jasser Khairallah, DO, Depinder Singh, MD, Steven Tate, MD, Lucia Tome, MD, Stanford Addiction Medicine Fellowship, Stanford, CA
- 2022-2023 Martin Binesh, MD, Bailee Jacobsen, DO, Henry Moss, DO, Mastaneh Nikravesh, MD, Gabriela Ruchelli, MD, Stanford Addiction Medicine Fellowship, Stanford, CA
- 2023-2024 Nicolas Garel, MD, Asaf Jacobs, MD, Connie Chen, MD, Diana Chen, MD, Steven Marabondo, MD, Nicole Steinmuller, MD

MedScholars Advisor, Stanford University

- 2016 MedScholar Advisor for Inbar Raber, *Qualitative Assessment of Clerkship Students' Perspectives of Pain and Addiction Curriculum at Stanford*, Stanford University School of Medicine, Stanford, California
- 2017 MedScholar Advisor for Alex Ball, *Developing the Addiction Curriculum at Stanford*, Stanford University School of Medicine, Stanford, California

2019 MedScholar Advisor for Emily Keamy-Minor, *Alcohol Screening for Patients Receiving Prescriptions for Benzodiazepines and Opioids*, Stanford University School of Medicine, Stanford, California

Dissertation/Masters Review Committees, Stanford University/Palo Alto Consortium

- 2016 Dissertation Advisor and Review Committee Member for Jennifer Bielenberg, *Addiction and Stigma*, PsyD Consortium, Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, California
- 2017 Dissertation Chair and Review Committee Chair for Shelby Schwartz, PsyD Consortium, Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, California
- 2018 Dissertation Chair and Review Committee Chair for Julia Yasser, PsyD Consortium, Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, California
- 2020 Dissertation Committee, Sarah Krasner, *Gender Differences in Cannabis Vaporizer Use*, PsyD Consortium, Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, California
- 2020 Dissertation Committee, Rebecca Rothberg, *Harm Reduction and Addiction Treatment*, PsyD Consortium, Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, California
- 2020 Dissertation Chair and Review Committee Chair for Benjamin Greenberg, *Shared Medical Appointments for Buprenorphine Prescribing for Individuals with Opioid Use Disorder: A Qualitative Study*, PsyD Consortium, Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, California
- 2020 Master's Thesis Advisor for Enrique Cazares-Navarro, *Trends of Benzodiazepine Use in the United States Among Older Adults: Clinical visits that include a benzodiazepine (Xanax, Valium, Klonopin) prescription have persisted between 2015 and 2019 among older adults in the continental United States, despite growing evidence of benzodiazepine harms*, Community Health and Prevention, Stanford Prevention Research Center, Stanford University School of Medicine, Stanford, California

Professional Association Membership

- 2011-2016 Member, Association of Medical Education and Research in Substance Abuse (AMERSA)
- 2011-present Member, American Society of Addiction Medicine (ASAM)
- 2011-present Member, California Society of Addiction Medicine (CSAM)
- 2019-present Member, American Psychiatric Association (APA)
- 2019-present Member, American College of Academic Addiction Medicine (ACAAM)

Regional, National, and International Service

Professional Societies and Advisory Boards and Committees

- 2012-2015 Facilitator, California Society of Addiction Medicine (CSAM) Annual Conference, San Francisco, California
- 2013-2014 Advisor, American Board of Addiction Medicine Practice Improvement and Performance Measures Action Group (PIPMAG)
- 2013-2018 Advisor, American Board of Addiction Medicine Fellowship Development Working Group
- 2013-2019 Board Member, Medical Education and Research Foundation (MERF) for the Treatment of Addiction
- 2013-2020 Member, Public Policy Committee, CSAM
- 2014-2020 Member, California Society of Addiction Medicine Education Committee
- 2014-2018 Member, California Society of Addiction Medicine Conference Planning
- 2015-2019 Board Member, California Society of Addiction Medicine
- 2015-2016 Representative, American Society of Addiction Medicine PCORI Workshop: *Long-Term Use of Opioids for Chronic Pain*
- 2015-2017 Representative, Appointed by Governor Jerry Brown to the Research Advisory Panel of California, January 2015
- 2015-2019 Member, Public Policy Committee, American Society of Addiction Medicine

- 2015-2016 Chair, Conference Planning Committee, California Society of Addiction Medicine Annual Conference
- 2016-2017 Vice-Chair, Conference Planning Committee, California Society of Addiction Medicine Annual Conference
- 2016-2020 Member, Physicians for Responsible Opioid Prescribing (PROP)
- 2016-2018 President, Addiction Medicine Fellowship Directors Association (AMFDA)
- 2019 Advisor, Task force for The Center on Addiction (a merger between Partnership for Drug Free Kids and CASA Columbia)
- 2019-2023 Board Member, American College of Academic Addiction Medicine
- 2020-2023 Member, American College of Academic Addiction Medicine (ACAAM) Lifelong Learning and Self-Assessment Committee
- 2021-present Member, Opioid Industry Documents Archive National Advisory Committee (NAC)
- 2023-2024 Member, Recovery Expert Advisory Panel (REAP) on behalf of the Ministry of Mental Health and Addiction, Alberta, Canada
- 2022-2023 Member, Advisory Council, National Fentanyl Awareness Day
- 2023-present Board Member, State of the Nation Project

Editorial Work

- 2003-2004 Guest Editor, *Academic Psychiatry*, Issue on Women in Academia
- 2013-2014 Reviewer, *How to Find Quality Addiction Treatment*, CASA Columbia
- 2014-2017 Associate Editor, *Addiction Science and Clinical Practice (ASCP)*

Ad-Hoc Manuscript/Report Review

Academic Psychiatry
Addiction
Addiction Science and Clinical Practice
Agency for Healthcare Research and Quality (AHRQ)
American Journal of Psychiatry
Annals of Internal Medicine

Archives of General Psychiatry
Asian Journal of Psychiatry
Biological Psychiatry
Bipolar Disorder
British Medical Journal
Cambridge University Press
Culture, Medicine, and Psychiatry
Current Biomarker Findings
Drugs: Education, Prevention & Policy
Expert Opinion on Pharmacotherapy
Expert Review of Neurotherapeutics
General Hospital Psychiatry
Healthcare: The Journal of Delivery Science and Innovation
Johns Hopkins University Press
Journal of Addiction Science and Clinical Practice
Journal of Affective Disorders
Journal of the American Medical Association
Journal of Psychiatric Research
Journal of Studies on Alcohol and Drugs
Medical Journal of Australia
New England Journal of Medicine
New Recovery Community Institutions
Pain Medicine
Psychological Medicine
Rationality and Society
Sociologic Forum
Substance Abuse
Substance Use and Misuse

Current Funding

- 2/23-1/25 Funder: Stanford Institute for Human Centered Artificial Intelligence 2022
Seed Grant Award, \$75,000
Title: Addicted by Design: An Investigation of How AI-fueled Digital
Media Platforms Contribute to Addictive Consumption
Role: Co-Principal Investigator (Co-PI: Johannes Eichstaedt)
- 7/20-6/25 Funder: Health Resources and Services Administration (HRSA),
\$1,452,178, 0.1 Calendar
Title: Addiction Medicine Fellowship
Purpose: Stanford University Department of Psychiatry proposes to
expand its existing Addiction Medicine Fellowship by two fellows in
medically underserved communities in Santa Clara County
Role: Principal Investigator/Project Director (Co-PI: Louie)

Previous Funding

- 1/00-1/01 Funder: American Psychiatric Association and Eli Lilly Training Grant
Title: Facial Emotion Processing in Patients with Bipolar Disorder
Role: PI
- 7/01-7/02 Funder: National Institute of Mental Health Research Fellowship
Title: Facial and Vocal Emotion Processing in Mood Disorders
Role: PI
- 11/01-11/03 Funder: National Institute of Mental Health
Title: Systematic Treatment Enhancement Program for Bipolar Disorder
Role: Site-Investigator (PI: Sachs, Mass General)
- 12/08-12/10 Funder: National Institute of Mental Health
Title: HPA Axis in Psychotic Depression, 2 RO1 MH050604-12
Role: Co-Investigator (PI: Schatzberg)
- 10/09-10/14 Funder: National Institute on Drug Abuse
Title: Extended Treatment for Smoking Cessation, R01 DA017441
Role: Co-Investigator (PI: David)
- 7/11-7/14 Funder: National Institute of Health
Title: Genetics of Symptomatology and Treatment Response in Depression
Role: Investigator (PI: Murphy)
- 1/12-12/15 Funder: Michael Alan Rosen Foundation
Title: Screening and Brief Intervention for Substance Misuse/Abuse
Role: Co- PI (Co-PI: Humphreys)
- 11/13-11/14 Funder: Stanford Center at Peking University (SCPKU)
Title: Narratives of Addiction in Contemporary China
Role: PI
- 1/14-1/15 Funder: Peter F. McManus Charitable Trust, SPO #112718
Title: Exploring Physician Opioid Prescribing Using a Novel Approach to Data Mining of Medical Records
Role: PI
- 1/14-1/15 Funder: American Board of Addiction Medicine/Conrad N. Hilton Foundation
Title: 2014 Next Generation Award for Adolescent Substance Use Prevention
Role: PI

- 11/14-11/15 Funder: Stanford Center for Continuing Medical Education (SCCME)
 Title: Prescription Drug Abuse: Compassionate Care for a Complex Problem
 Role: PI
- 1/15-1/16 Funder: American Board of Addiction Medicine/Conrad N. Hilton Foundation
 Title: 2015 Next Generation Award for Adolescent Substance Use Prevention
 Role: PI
- 7/16-7/17 Funder: Stanford Center for Continuing Medical Education (SCCME)
 Title: Tapering Patients off of Chronic Opioid Therapy
 Role: PI
- 11/2017 Funder: VA Center for Innovation to Implementation
 Title: The Hidden Role of Benzodiazepines in the Prescription Drug Epidemic
 Role: Small grant awardee
- 10/15-10/20 Funder: National Institute of Alcohol Abuse & Alcoholism
 Title: CNS Deficits: Interaction of Age & Alcoholism, R01 AA005965
 Purpose: Determine the impact of heavy, chronic alcohol use on brain structure and function, and the capacity of the brain to heal in a period of abstinence.
 Role: Co-Investigator (MPI: Pfefferbaum and Zahr)
- 7/18-7/21 Funder: Department of Governmental Relations, Stanford Hospital/Clinics
 Title: Addiction Medicine Peer Mentor Program
 Purpose: To explore the feasibility and safety of integrating a peer mentor into the Addiction Medicine Dual Diagnosis Clinic Treatment Team
 Role: Co-Investigator (MPI: Raheemullah and Gallagher)
- 12/19-11/22 Funder: Stanford Center for Health Education (“SCHE”)
 Title: Psychology of Addiction and Recovery
 Purpose: Stanford University Department of Psychiatry in partnership with SCHE and Getsmarter proposes to create an online professional education course on addiction medicine for learners around the world.
 Role: Academic Director
- 7/20-6/24 Funder: NIDA, \$1,050,000, 0.1 Calendar
 Title: Western Node of NIDA Clinical Trials Network
 Purpose: Oregon Health Sciences University, Stanford University/Palo Alto VA, UC San Francisco, and the San Francisco Health Department propose to serve as a node in NIDA’s national network which generates and support randomized clinical trials of drug addiction treatment.

Role: Co-Investigator (MPI: Korthuis and Humphreys)

Scholarly Work

Books

Lembke, A. *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop*, Johns Hopkins University Press, November 15, 2016 (Amazon Bestseller)

Lembke, A. *Dopamine Nation: Finding Balance in the Age of Indulgence*, Dutton Penguin Random House, August 21, 2021 (New York Times Bestseller, Los Angeles Times Bestseller, Washington Post Bestseller, Audibles Bestseller, Amazon Bestseller, translated into 35 languages, more than a million copies sold worldwide)

Lembke, A. *The Official Dopamine Nation Workbook*, Dutton Penguin Random House, October 1, 2024

Peer-Reviewed Online Stanford EdX CME Courses

Lembke, A. *Prescription Drug Misuse and Addiction: Compassionate Care for a Complex Problem*, produced by the Stanford Center for Continuing Medical Education, <https://www.edx.org/course/prescription-drug-misuse-and-addiction-compassionate-care-for-a-complex-problem?index=undefined>

Lembke, A. *Tapering Patients Off of Chronic Opioid Therapy*, produced by the Stanford Center for Continuing Medical Education, <https://www.edx.org/bio/anna-lembke-hsdp-20909>

Lembke, A. *The Psychology of Addiction and Recovery*, produced by the Stanford Center for Health Education in collaboration with Getsmarter and 2u, https://sche-online.getsmarter.com/presentations/lp/stanford-sche-psychology-of-addiction-and-recovery-online-short-course/?ef_id=c:434032772062_d:c_n:g_ti:kwd-536821850850_p:k:%2Bstanford%20%2Bpsychology_m:b_a:101946842798&gclid=EAIaIQobChMI-bif96zQ6wIVhCmzAB22uAwAEAAAYASAAEgKyQfD_BwE&gclsrc=aw.ds

Peer-Reviewed Original Research Articles

1. **Lembke A**, Ketter TA. Impaired Recognition of Facial Emotion in Mania *American Journal of Psychiatry* 2002; 159(2):302-4.
2. Menon V, Levitin DJ, Smith BK, **Lembke A**, Krasnow BD, Glazer D, Glover GH, McAdams S. Neural Correlates of Timbre Change in Harmonic Sounds *Neuroimage*

2002; 17(4):1742-54.

3. Janenawasin S, Wang PW, **Lembke A**, Schumacher M, Das B, Santosa CM, Mongkolcheep J, Ketter TA. Olanzapine in Diverse Syndromal and Subsyndromal Exacerbations of Bipolar Disorders *Bipolar Disorders* 2002; 4(5):328-34.
4. DeBattista C, **Lembke A**, Solvason HB, Ghebremichael R, Poirier J. A Prospective Trial of Modafinil as an Adjunctive Treatment of Major Depression. *Journal of Clinical Psychopharmacology* 2004; 24(1):87-90.
5. **Lembke A**, Miklowitz D, Otto M, Wisniewski S, Sachs N, Thase M, Ketter TA. Psychosocial Service Utilization by Patients with Bipolar Disorders. *Journal of Psychiatric Practice* 2004; 10(2):81-87.
6. Miklowitz, D.J., Otto, M.W., Wisniewski, S.R., Araga, M., Frank, E., Reilly-Harrington, N.A., **Lembke, A.**, Sachs, G.S. Psychotherapy, Symptom Outcomes, and Role Functioning Over One Year among Patients with Bipolar Disorder. *Psychiatric Services* 2006; 57(7):959-65.
7. **Lembke, A.**, Bradley, K.A., Henderson, P., Moos, R. Harris, A.H.S., Alcohol Screening Scores and the Risk of New-Onset Gastrointestinal Illness or Related Hospitalization. *Journal of General Internal Medicine*, 2011; 26(7):777-782.
8. Che, A., Gomez, R., Keller, J., **Lembke, A.**, Tennakoon, L., Cohen, G., Schatzberg, A., The relationships of positive and negative symptoms with neuropsychological functioning and their ability to predict verbal memory in psychotic major depression. *Psychiatry Research*, 2012; 198(1):34-8.
9. Harris, A.H.S., **Lembke, A.**, Henderson, P., Gupta, S., Moos, R., & Bradley, K.A. Risk of Future Trauma Based on Alcohol Screening Scores: A Two-Year Prospective Cohort Study Among US Veterans. *Addiction Science & Clinical Practice*, 2012; 7(1):6.
10. **Lembke, A.**, Gomez, R., Tenakoon, L., Keller, J., Cohen, G., Williams, G. H., Kraemer, F.B., Schatzberg, A.F., The mineralocorticoid receptor agonist fludrocortisone, differentially inhibits pituitary-adrenal activity in humans with psychotic major depression. *Psychoneuroendocrinology*, 2012, 38(1):115-121.
11. Del Re, A.C., Gordon, A.K., **Lembke, A.** Harris, A.H.S., Utilization of Topiramate to Treat Alcohol Use Disorders in the Veterans Health Administration. *Addiction Science and Clinical Practice*, 2013;8(12).
12. Harris, AHS, Ellerbe, L, Reeder, RN, Bowe, T, Gordon, AJ, Hagedorn, H, Oliva, E, **Lembke, A**, Kivlahan, D, Trafton, JA. Pharmacotherapy and Alcohol Dependence: Perceived treatment barriers and action strategies among Veterans Health Administration service providers. *Psychological Services*, 2013; 10(4):410-419.

13. Kelley, R., Garrett, A., Cohen, J., Gomez, R., **Lembke, A.**, Keller, J., Reiss, A.L., Schatzberg, A. Altered brain function underlying verbal memory encoding and retrieval in psychotic major depression. *Psychiatry Research: Neuroimaging*, 2013; 38 (1):115-121.
14. **Lembke, A.** 2013. Sacrifice, stigma, and free-riding in Alcoholics Anonymous (AA): A new perspective on behavior change in self-help organizations for addiction. In: University, S. (ed.). https://www.chapman.edu/research/institutes-and-centers/institute-religion-economics-society/_files/guest-lectures/lembke-paper.pdf.
15. Yuen KW, Garner JP, Carson DS, Keller J, **Lembke A**, Hyde SA, Kenna HA, Tennakoon L, Schatzberg AF, Parker KJ. Plasma oxytocin concentrations are lower in depressed vs. healthy control women and are independent of cortisol. *Journal of Psychiatric Research*, 2014; 51:30-6.
16. Schatzberg AF, Keller J, Tennakoon L, **Lembke A**, Williams G, Kraemer FB, Sarginson JE, Lazzeroni LC, Murphy GM. HPA axis genetic variation, cortisol and psychosis in major depression. *Molecular Psychiatry*, 2014; 19(2):220-7.
17. Maclean D, Gupta S, **Lembke A**, Manning CD, Heer J. Forum77: An Analysis of an Online Health Forum Dedicated to Addiction Recovery. *ACM Computer-Supported Cooperative Work (CSCW)*, <https://idl.cs.washington.edu/papers/forum77/>; 2015; *Role: Data analysis, manuscript preparation. *Best Paper Honorable Mention.*
18. **Lembke, A.**, Cheng, Niushen. A Qualitative Study of Treatment-Seeking Heroin Users in Contemporary China, *Addiction Science and Clinical Practice*, 2015;10:23.
19. Chen, J., Humphreys, K., Shah, N.H., **Lembke, A.** Distribution of Opioids by Different Types of Medicare Prescribers, *JAMA Internal Medicine*, 2016; 176(2):259-261.
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Role: Data analysis, manuscript preparation.

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Role: Study physician, manuscript preparation.
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Role: Study physician, manuscript preparation.
26. Raber, I., Ball, A., Papac, J., Aggarwal, A., Sussman, R., Basaviah, P., Newmark, J. **Lembke, A.** Qualitative Assessment of Clerkship Students' Perspectives of the Topics of Pain and Addiction in their Preclinical Curriculum, *Academic Psychiatry*, 2018;42:664, doi: 10.1007/s40596-018-0927-1
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Role: Data interpretation, manuscript preparation
28. Haug, N. A., Morimoto, E. E., **Lembke, A.** Online mutual-help intervention for reducing heavy alcohol use, *Journal of Addictive Diseases*, 2020. <https://doi.org/10.1080/10550887.2020.1747331>
29. Deng, H., Benhamou, O., **Lembke, A.** Gabapentin dependence and withdrawal requiring an 18-month taper in a patient with alcohol use disorder: a case report, *Journal of Addictive Diseases*, published online March 30, 2021. <https://www.tandfonline.com/doi/full/10.1080/10550887.2021.1907502>
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Peer-Reviewed Book Chapters

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2. Ketter T, Wang P, Dieckmann N, **Lembke A**, Becker O, Camilleri C: Brain Anatomic Circuits and the Pathophysiology of Affective Disorders, in *Brain*

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3. Ketter T, Wang P, **Lembke A**, Sachs N: Physiological and Pharmacological Induction of Affect, in *The Handbook of Affective Science*. Edited by RJ D, KR S, HH G. New York, Oxford University Press, 2002, pp 930-962
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8. Cohen, G., **Lembke, A**. Childhood Behavior and Later Substance Use, in *Encyclopedia of Drugs, Alcohol & Addictive Behavior*, 3rd Edition. Edited by Korsmeyer P and Kranzler H, Macmillan Reference USA, 2008
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10. **Lembke, A.**, Humphreys, K. Moos, R. Diagnosis, Development, and Treatment of Substance Use Disorders among Adolescents and Young Adults, in *Stanford School of Medicine Handbook of Developmental Psychiatry*. Edited by Steiner, H, NY, Jossey/Bass/Wiley, 2010, pp. 365-396
11. **Lembke, A.**, & Humphreys, K. What self-help organizations tell us about the syndrome model of addiction. In Shaffer HJ (Editor-in-Chief), LaPlante DA and Nelson SA (Associate Editors), *APA Addiction Syndrome Handbook: Vol. 2. Recovery, Prevention, and other Issues*, Washington, DC: American Psychological Association, 2012, pp. 157–168

12. **Lembke, A.**, Stanford, M. Clinical Management of Alcohol Use Disorders in the Neurology Clinic, Handbook of Clinical Neurology, Vol 125, 3rd Series, *Alcohol and the Nervous System* 1E, Edited by Sullivan, EV Pfefferbaum, A, Elsevier, 2014
13. Hall R, **Lembke A.** Substance Use Disorders in Adolescence. In: Steiner H (Ed) with Hall R. *Treating Adolescents* (2nd Edition). Westford, Massachusetts: Wiley, 2015, pp 141-164
14. **Lembke, A.**, Alcoholism and drug abuse, sociology of. In S. Martin (Ed.), *The SAGE encyclopedia of alcohol: Social, cultural, and historical perspectives*. (Vol. 1, pp. 98-104). Thousand Oaks, CA: SAGE Publications, Inc. 2015 doi: <http://dx.doi.org/10.4135/978148331096.n27>
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18. **Lembke, A.**, Raheemullah, A. Addiction and Exercise. In Noordsy DL, (editor). Lifestyle Psychiatry: Using Exercise, Diet and Mindfulness to Manage Psychiatric Disorders. Washington DC: American Psychiatric Publishing, 2019

Other Publications

1. **Lembke, A.** A Psychosocial Approach to Postpartum Depression *Psychiatric Times* 2002; XIX(6):11
2. **Lembke, A.** A downside of electronic health records: How 90 percent of Merced County, California patients became Albanian, *Scope*, the Stanford University School of Medicine blog, October 11, 2012.
3. **Lembke, A.** To reduce use, educate teens on the risks of marijuana and prescription drugs, *Scope*, the Stanford University School of Medicine blog, October 18, 2012.

4. **Lembke, A.** Why doctors prescribe opioids to patients they know are abusing them, *Scope*, the Stanford University School of Medicine blog, October 25, 2012.
5. **Lembke, A.** How to make alcoholics in recovery feel welcome this holiday season, *Scope*, the Stanford University School of Medicine blog, December 10, 2012.
6. **Lembke, A.** The DSM-V Gets it Right. *The Fix*, April 11, 2013.
7. **Lembke, A.** Inside the Mind of an Addiction Medicine Physician, *The Fix*, December 4, 2014.
8. **Lembke, A.** Unmet Expectations: Testifying before Congress on the Opioid Abuse Epidemic, *Scope*, the Stanford University School of Medicine blog, April 29, 2015
9. **Lembke, A.** Ask an Expert. Should I go off Suboxone? If so, how? *The Fix*, April 29, 2015
10. **Lembke, A.** Ask an Expert: Should I Go Through Detox if I'm Not Sure I Want to Be Abstinent? *The Fix*, May 10, 2016
11. **Lembke, A.** Prince, opioids and the rest of us: America needs a massive public education campaign to help people hooked on Percocet and related drugs, *New York Daily News Op-Ed*, May 11, 2016
12. **Lembke, A.** Be sure the check the PDMP before prescribing controlled medications, *Psychiatric News*, June 17, 2016
<http://psychnews.psychiatryonline.org/doi/full/10.1176/appi.pn.2016.pp6b2>
13. **Lembke, A.** The Compassionate Doctor, the Narcissistic Injury, and the Prescription Opioid Epidemic. *The Fix*, Nov 30, 2016
<https://www.thefix.com/compassionate-doctor-narcissistic-injury-and-prescription-opioid-epidemic>
14. **Lembke, A.** Commentary provided in response to Joseph Bernstein's "Not the Last Word: Viscosupplementation, Opioid Overuse, and the Excesses of Empathy", *Clin Orthop Relat Res* (2017) 475:2369–2372
15. **Lembke, A.** Purdue Pharma is Done Promoting Opioids: Here's Why It's a Big Deal, *Fortune Magazine*, Feb 2018 <http://fortune.com/2018/02/13/purdue-pharma-oxycontin-opioid-crisis/>
16. **Lembke A.** Can medical marijuana replace opioids to relieve cancer pain? *HemOnc Today*. 2018;19(24):13.

17. **Lembke, A.**, Eyal, N. Is Social Media Hijacking our Minds?, *Pairagraph: A hub of discourse between pairs of notable individuals*, <https://www.pairagraph.com/dialogue/efa31e60b1e2498588ddc10d074b494c> , 2021
18. Ballanytne, Jane C.; Butler, Judy; Coelho, Paul; Franklin, Gary M.; Fugh Berman, Adriane; Gelfand, Stephen; Johnson, Chris; Juurlink, David; Kolodny, Andrew; **Lembke, Anna**; Orr, Rosemary; Strelitzer, Jon; Sullivan, Mark D.; Tauben, David J. Tully, Betts; Von Korff, Michael. Letter from Physicians for Responsible Opioid Prescribing (PROP) to the American Medical Association (AMA) -- RE: AMA's Opposition to Dose & Duration Guidance for Opioid Prescribing. <https://www.bmjjournals.org/content/372/bmjm4901/rr> - 2021
19. **Lembke, A.**, Digital Addictions Are Drowning Us in Dopamine, *The Wall Street Journal*, August 13, 2021 <https://www.wsj.com/articles/digital-addictions-are-drowning-us-in-dopamine-11628861572>
20. **Lembke, A.** Can Bay Area entrepreneurs provide a tech solution to video game addiction? *San Francisco Examiner*, September 3, 2021
<https://www.sfxaminer.com/news/can-bay-area-entrepreneurs-provide-a-tech-solution-to-video-game-addiction/>
21. **Lembke, A.** Californians don't need another addiction crisis. Reject Prop. 27: Permitting online sports betting would increase access to a behavior that wreaks havoc on vulnerable individuals. *The San Jose Mercury News*, October 11, 2022. <https://www.mercurynews.com/2022/10/11/opinion-californians-dont-need-another-addiction-crisis-reject-prop-27/>
22. **Lembke, A.** Too much pleasure causes pain. *Institute of Art and Ideas News*, March 20, 2023, https://iai.tv/articles/too-much-pleasure-causes-pain-anna-lembke-auid-2421?_auid=2020
23. **Lembke, A.** Guest Editorial: History Repeats Itself: Psychedelics Are Promoted Today the Way Opioids Were Promoted in the Early 2000s. *The ASAM Weekly*, January 22, 2024. <https://www.asam.org/publications-resources/the-asam-weekly/detail/2024/01/22/guest-editorial--history-repeats-itself--psychedelics-are-promoted-today-the-way-opioids-were-promoted-in-the-early-2000s>
24. **Lembke, A.**, Rausch, Z. Haidt, J., Applying The Bradford Hill Criteria To Social Media Use and Adolescent Mental Health, *After Babel Substack*, <https://www.afterbabel.com/p/bradford-hill-social-media>

National and International Government Testimony

1. Apr 2015 Invited expert testimony for the Congress of the United States, House of Representatives, Committee on Energy and Commerce, Subcommittee on Oversight

and Investigations hearing entitled “Combatting the Opioid Abuse Epidemic: Professional and Academic Perspectives,” Washington, D.C. <https://democrats-energycommerce.house.gov/committee-activity/hearings/hearing-on-combatting-the-opioid-abuse-epidemic-professional-and>

2. Sep 2015 Invited expert testimony for the White House Symposium, “Medicine Responds to the Need for Addiction Expertise”, The Office of National Drug Control Policy, The White House, Washington, D.C.
<https://obamawhitehouse.archives.gov/the-press-office/2015/09/18/white-house-drug-policy-office-hosts-%E2%80%9Cmedicine-responds-addiction%E2%80%9D>
3. Sep 2016 Invited expert testimony for the United States Senate, Committee of Homeland Security and Government Affairs, Permanent Subcommittee on Investigations, on the overuse and overprescribing of prescription opioids, “Combatting the Opioid Epidemic: A Review of Anti-Abuse Efforts by Federal Authorities and Private Insurers”, Washington, D.C.
4. Oct 2016 Invited expert testimony for the White House Symposium, “Academic Medical Centers as Centers of Excellence in Addiction Medicine”, The Office of National Drug Control Policy, The White House, Washington, D.C.
<http://www.abms.org/news-events/white-house-symposium-briefing-session-on-addiction/>
5. May 2017 Invited expert consultation on curbing the opioid epidemic to Nevada’s Office of the Governor
6. May 2017 Invited expert consultation on curbing the opioid epidemic to Kentucky’s Office of the Governor
7. Sep 2017 Invited expert testimony for the Congress of the United States, House of Representatives, “Addiction Medicine: The Urgent Need for Trained Physicians”, hosted by The Addiction Medicine Foundation and co-sponsored by the Congressional Prescription Drug Abuse Caucus, the Congressional Addiction Treatment and Recovery Caucus, and the Congressional Bipartisan Heroin Task Force
<https://www.youtube.com/watch?v=y6kBoQckmHw>
8. Jan 2018 Invited expert testimony in federal court, Judge Dan Polster presiding, in the multi-district litigation lawsuit against opioid manufacturers and distributors
<https://www.law360.com/articles/1008010/inside-the-opioid-mdl-s-big-closed-door-hearing>
9. Mar 20, 2019 Invited expert testimony for the Joint Hearing of Senate and General Assembly Health and Human Services Committees on “Opioids, cannabis, and vaping: Using science to protect public health,” State of Rhode Island

10. Jan 18, 2022, Invited expert testimony for the Kentucky circuit court judges on the role of the opioid industry in promoting misleading messages about opioids. This presentation was given at the invitation of the “Science and the Law” initiative at the American Association for the Advancement of Science (AAAS), the largest multidisciplinary scientific society in the world, and a 501(c)(3) non-governmental organization, in conjunction with the Administrative Office of Kentucky Courts.
11. February 2022, Invited expert testimony for elected representatives in Edmonton, Canada at the invitation of the Ministerial Assistant to the Associate-Minister of Mental Health and Addictions on curbing the opioid epidemic.
12. February 2022, Invited expert testimony for U.S. Senate Judiciary Committee, Hearing Examining Kids’ Online Safety
13. March 2023 Testimony for Commerce Finance and Policy Committee, the Minnesota House of Representatives and the Minnesota State Senate Examining Kids’ Online Safety

Medical Expert Witness (last 5 years)

1. People v. Philip Morris Ingram, (Cal. Super. Ct., Docket 62-144622)
2. National Prescription Opiate Litigation, MDL No. 2804 (N.D. Ohio, Case 1:17-md-2804)
3. In Re Opioid Litigation, (Suffolk County, New York Supreme Court, Index No. 400000/2017), relating to Case Nos. County of Suffolk, 400001/2017; County of Nassau, 400008/2017; and New York State, 400016/2018
4. Cabell County Commission and City of Huntington, West Virginia, (The Cabell Huntington Community) v. AmerisourceBergen Drug Corporation, Cardinal Health, Inc., and McKesson Corporation, No. 1:17-op-45053-DAP and No. 1:17- op-45054
5. People of the State of California v. Purdue Pharma, L.P., et al., No. 30-2014-00725287-CU-BT-CXC
6. Miner v. Olsen, et al. (arbitration)
7. The County of Lake, Ohio v. CVS Health Corporation., et al, No. 18-op-45032 and 18-op-45079
8. The City and County of San Francisco, et al., vs. Purdue Pharma L.P., et al., No. 18-cv-07591-CRB

Selected Invited Lectures, Domestic and International (2015-present)

1. Feb 2015 *Drug Addiction and the Internet: Justin's Story*, Psychiatry Grand Rounds, Alta Bates Summit Medical Center, Berkeley, California
2. Feb 2015 *Pain, Addiction, and the Drug-Seeking Patient: Compassionate Care for a Complex Problem*, Santa Clara Valley Medical Center CME Symposium on Addiction, Santa Clara, California
3. Mar 2015 *The Prescription Drug Epidemic: Technology as Both Friend and Foe*, Northern California Psychiatric Society Annual CME Conference, Monterey, California
4. Sept 2015 *The Prescription Drug Epidemic: Preserving Compassion for the Drug-Seeking Patient*, Mills Peninsula Health Services CME Lecture Series, San Mateo, California
5. Sept 2015 *The Prescription Drug Epidemic: Compassionate Care for a Complex Problem*, Psychiatry Grand Rounds Speaker, Oregon Health Sciences University, Portland, Oregon
6. Oct 2015 *Chronic Pain and Addiction: The Compassionate Doctor, The Narcissistic Injury, and the Primitive Defense*, California Society of Addiction Medicine, State of the Art Annual Conference, San Francisco, California
7. Oct 2015 *Prescription Drug Misuse and the Doctor Patient Relationship*, Keynote Speaker, American Correctional Healthcare Services Association, Tailoring Health Care for Inmates, Sacramento, California
8. Oct 2015 *Addiction Medicine: Managing Prescription Drug Misuse and Addiction, Emerging and Innovative Trends in Psychiatry and Behavioral Health*, Stanford University School of Medicine, Stanford, California
9. Oct 2015 *The Prescription Drug Epidemic: How Doctors are Complicit, and How We Can Do Better*, Regional Medical Center of San Jose CME Lecture Series, San Jose, California
10. Dec 2015 *Exploring Dual Diagnosis: What came first, the substance use disorder or the psychiatric disorder, and does it even matter?* Mills Peninsula Health Services CME Lecture Series, San Mateo, California
11. Jan 2016 *The Prescription Drug Epidemic and the Doctor Patient Relationship*, San Francisco General Hospital Primary Care Grand Rounds, San Francisco, California
12. Mar 2016 *Protecting our Developing Youth: Adolescent Addiction, Prevention and Recovery*, Keynote Speaker, Adolescent Counseling Services, East Palo Alto,

California

13. Mar 2016 *Opioid Therapy for Chronic Non-Cancer Pain*, 2016 Third Annual Addiction Medicine Conference, San Jose Valley Medical Center, San Jose, California
14. Mar 2016 *The Prescription Drug Epidemic*, Keynote Speaker, Stanford Annual Adjunct Faculty Retreat, Palo Alto, California
15. Mar 2016 *Chronic Opioids: Shifting the Paradigm*, Keynote Speaker, Samaritan Center & Health Career and Training Center, Lebanon, Oregon
16. Jun 2016 *The Compassionate Doctor, the Drug Seeking Patient, the Narcissistic Injury, and the Primitive Defense*, Keynote Speaker, Cedar Sinai Annual Psychiatric Conference, Los Angeles, California
17. Sep 2016 *Myths and Facts about Opioids*, DCRx: The DC Center for Rational Prescribing; <http://doh.dc.gov/dcrx>, Washington, DC
18. Sep 2016 *Getting Patients Off of Opioids*, DCRx: The DC Center for Rational Prescribing; <http://doh.dc.gov/dcrx>, Washington, DC
19. Sep 2016 *Pharmacotherapy for Substance Use Disorders*, Department of Psychiatry Annual CME Conference, Stanford University School of Medicine, Stanford, California
20. Oct 2016 *State of the Art Treatment for Substance Use Disorders and other Addictions*, Keynote Speaker, 3-part lecture series, Beijing University, #6 Hospital, Beijing, China
21. Nov 2016 *Prescription Drug Misuse and the Doctor Patient Relationship*, Psychiatry, San Mateo County Health Systems Grand Rounds, San Mateo, California
22. Jan 2017 *Effective Strategies for the Non-Adherent Buprenorphine Patient: Rational Monitoring and Contingency*, California Society of Addiction Medicine, Treating Addiction in the Primary Care Safety Net, Webinar
23. Feb 2017 *How to safely taper patients off high dose prescription opioids for chronic pain*, Keynote Speaker, California Center for Care Innovations, Treating Addiction in the Primary Care Safety Net, Los Angeles, California
24. Feb 2017 *The Worst Opioid Epidemic in U.S. History: How did we get here, and how can we get out?* Stanford Parents Weekend Back to School, Stanford, California
25. Feb 2017 *When Pain Treatment Becomes Addiction Treatment*, American Psychological Association Annual Meeting, San Francisco, California

26. Feb 2017 *Parallel Crises: The Over and Under Prescription of Opioids*, American Association of Medical Colleges (AAMC) Webinar
27. Mar 2017 *How Doctors Contributed to the Opioid Epidemic, and What We Can Do to Fix It*, Intermountain Health Care Book Club Speaker for *Drug Dealer, MD*, Intermountain Health Care, Salt Lake City, Utah
28. Mar 2017 *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop*, Culture and Politics of Mental Health, Anthropology 1737-1020, Professor Tomas Matza, University of Pittsburgh, Pittsburgh, Pennsylvania
29. Mar 2017 *The Worst Opioid Epidemic in U.S. History: How did we get here, and how can we get out?* Santa Cruz Health Care Initiative, Santa Cruz, California
30. Mar 2017 *The Canary in the Coal Mine: The Prescription Drug Epidemic as a Symptom of a Faltering Health Care System* Valley Care Medical, Pleasanton, California
31. Mar 2017 *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop*, Northern California Psychiatric Society, Napa Valley, California
32. Apr 2017 *Pharmacotherapy for Addictive Disorders*, Alta Bates Grand Rounds, Alta Bates Hospital Berkeley, California
33. Apr 2017 *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop*, Stanford TEDx, Stanford, California
34. Apr 2017 Invited speaker, 6th Annual Health *Technology Forum Innovation Conference: Common Good!* Stanford University School of Medicine, Stanford, California
35. Apr 2017 *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop*, Keynote Speaker, 8th Annual Lloyd C. Elam Symposium, Meharry Medical College, Nashville, Tennessee
36. Apr 2017 *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop*, Keynote Speaker, Association of Contextual Behavioral Sciences (ACBS), Chicago, Illinois
37. May 2017 *The Worst Opioid Epidemic in U.S. History: How did we get here, and how can we get out?* Stanford Health Matters, Stanford, California
38. May 2017 *The Compassionate Doctor, the Suffering Patient, and the Prescription Drug Epidemic*, Central California Alliance for Health (the Alliance), Merced,

California

39. May 2017 *The Compassionate Doctor, the Suffering Patient, and the Prescription Drug Epidemic*, Janus of Santa Cruz, Seaside, California
40. May 2017 *Invisible Forces Driving the Opioid Epidemic: From Disability Reform to Illness Narratives*, Keynote Speaker, OPG 6th Annual Pain Conference Agenda, Ashland, Oregon
41. May 2017 *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop*, Internal Medicine Residency Program Invited Visiting Professor and Grand Rounds Speaker, Johns Hopkins Bayview Medical Center, Baltimore, Maryland
42. Jun 2017 *Invisible Forces Driving the Opioid Epidemic: From Disability Reform to Illness Narratives*, Keynote Speaker, PharmedOut Annual Conference, Georgetown University Medical Center, Washington, DC
43. Jun 2017 *Overprescribing in the Elderly: Causes, Risks, and Interventions*, Keynote Speaker at the 17th Annual California Senior Injury Prevention Educational Forum, Oakland, California
44. Sep 2017 *The Opioid Epidemic*, Keynote Speaker, Department of Labor West Coast Symposium, San Francisco, California
45. Sep 2017 *Treating Addiction without Feeding It*, Keynote Speaker, American Correctional Health Services Association (ACHSA) "Modern Challenges in Jails and Prisons", San Jose, California
46. Sep 2017 *Invisible Forces Driving the Prescription Drug Epidemic: From Disability Reform to Illness Narratives*, Keynote Speaker, The International Benzodiazepine Symposium, Redmond, Oregon
47. Sep 2017 *Reframing Medical Practice Involving Controlled Substances*, Keynote Speaker, The Association of State and Territorial Health Officials (ASTHO) 2017 Annual Conference, Washington, DC
48. Oct 2017 *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop*, Keynote Speaker, The Patient Safety Institute for Mission Health 3rd Annual National Patient Safety Conference – Cultivating a Culture of Safety, Asheville, North Carolina
49. Nov 2017 *The Opioid Epidemic, How We Got Here, and How We Can Get Out*, Keynote Speaker, American Association of Medical Colleges, Learn, Serve, Lead, Boston, Massachusetts

50. Nov 2017 *The Opioid Fallout: Lives, Jobs and a Lost Generation*, Bloomberg News Live, The Year Ahead, Bloomberg Headquarters, New York City, New York
51. Nov 2017 *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop*, Grand Rounds Speaker, Westchester Medical Center, Westchester, New York
52. Dec 2017 *The Opioid Epidemic: How We Got Here, and How We Can Get Out*, Keynote Speaker, Primary Care and Behavioral Health Integration Summit, Health Quality Partners, San Diego, California
53. Jan 2018 *How to Survive in a Dopamine Saturated World*, Psychiatry Grand Rounds, Vanderbilt University School of Medicine, Nashville, Tennessee
54. Feb 2018 *Is Marijuana a Harm Reduction Strategy?*, Stanford Psychiatry Grand Rounds, Stanford University School of Medicine, Stanford, California
55. Mar 2018 *Raising T(w)eens in a Dopamine Saturated World*, Woodside Priory High School, Woodside, California
56. Mar 2018 *Raising T(w)eens in a Dopamine Saturated World*, Sacred Heart High School, Menlo Park, California
57. Apr 2018 *The Opioid Epidemic: What Doctors and Hospitals Can Do*, California Pacific Medical Center Internal Medicine Grand Rounds, San Francisco, California
58. Apr 2018 *Adolescent Substance Abuse: Risk, Resilience, Prevention, and Treatment*, 2018 Adolescent Mental Wellness Conference, sponsored by Stanford University, Santa Clara, California
59. Apr 2018 *Drug Dealer, MD*, Keynote Speaker, STAR Trauma Recovery Center, Ohio State University Medical School, Columbus, Ohio
60. May 2018 *The Opioid Epidemic: What Doctors and Hospitals Can Do*, Alpha Omega Alpha Visiting Professorship, Psychiatry Grand Rounds, University of Kansas School of Medicine, Kansas City, Kansas
61. May 2018 *Opioids, Pain and Addiction Treatment: Pioneering Change*, Oregon Pain Guidance Annual Conference, Eugene, Oregon
62. Jun 2018 *The Opioid Epidemic, How We Got Here and How to Get Out*, Indiana Prosecuting Attorneys Council (IPAC), invited speaker, French Lick, Indiana
63. Jun 2018 *What is Addiction and How to Treat It*, Perrin's Opioid Litigation Conference, Dallas, Texas

64. Jul 2018 *Understanding the Opioid Crisis at the End of Life*, San Francisco Bay Area Hospice and Palliative Nurses Association, Stanford, California
65. Aug 2018 *The Opioid Epidemic: How We Got Here, and How to Get Out*, Apple Corporation, Cupertino, California
66. Aug 2018 Moderator, *Beyond Nature and Nurture – Social Determinants of Addiction and Health*, California Society of Addiction Medicine State of the Art Annual Conference, San Francisco, California
67. Aug 2018 *Drug Dealer, MD: The Opioid Crisis*, Apple Corporation Wellness Outreach, Cupertino, California
68. Sep 2018 *The Opioid Epidemic: How We Got Here, and How to Get Out*, Public Funds Forum, Laguna Beach, California
69. Sep 2018 *Drug Dealer, MD: The Opioid Crisis*, Baton Rouge Health District Community Service Talk and Medical Center Grand Rounds, Baton Rouge, Louisiana
70. Sep 2018 *Drug Dealer, MD: The Opioid Crisis*, Montrose Annual CME Conference, Montrose, Colorado
71. Oct 2018 *The Pleasure Pain Balance*, Los Altos High School “STEAM Week”, Los Altos, California
72. Oct 2018 *The Opioid Epidemic: From Freud to Fentanyl*, Keynote Speaker, PerformRX Pharmacy Benefits Manager Annual Conference, Orlando, Florida
73. Oct 2018 *The Opioid Epidemic: How We Got Here, Where We Are Now, and How to Get Out*, Keynote Speaker, Distinguished Lecture Series, Annual Meeting of the American Academy of Psychiatry and the Law (AAPL), Austin, Texas
74. Oct 2018 *Drug Dealer MD: The Opioid Epidemic*, Keynote Speaker, Psych Congress, Orlando, Florida
75. Dec 2018 *How to Taper Patients Off of Chronic Opioid Therapy*: 69th Annual Refresher Course for Family Physicians, Montreal, Canada
76. Jan 2019 *From Freud to Fentanyl: The Opioid Epidemic as a Symptom of a Faltering Health Care System*, Internal Medicine Grand Rounds, Santa Clara Valley Medical Center, Santa Clara, California
77. Feb 2019 *Our Other Prescription Drug Problem (Benzodiazepines and How to Taper)*, Internal Medicine Grand Rounds, San Mateo Medical Center, San Mateo, California

78. Feb 2019 *The Opioid Epidemic: How We Got Here, Where We Are Now, and How to Get Out*, National Keynote Speaker, Ohio State University Inter-Professional Summit, Columbus, Ohio
79. Feb 2019 *The Opioid Epidemic: How We Got Here, Where We Are Now, and How to Get Out*, Keynote Speaker, Pain and Addiction Summit, AT&T Conference Center/University of Texas, Austin, Texas
80. Apr 2019 *The Opioid Epidemic: From Freud to Fentanyl*, Keynote, Speaker, Geminus Community Partners Annual Conference, Merrillville, Indiana
81. Apr 2019 Invited commentator on *Deaths of Despair* for honorees Princeton Economists Ann Case and Angus Deaton, The 2019 Tanner Lectures on Human Values, Sponsored by the Office of the President and the McCoy Family Center for Ethics in Society, Stanford, California
82. Apr 2019 *The Opioid Epidemic: Where We Are Now*, Keynote speaker for the National Council on Alcoholism and Drug Abuse (NCADA) Spring Awards Luncheon, St. Louis, Missouri
83. May 2019 *The Opioid Epidemic: Where We Are Now*, Faculty presenter Stanford Sierra Camp Womens' Alumni Wellness Retreat, Fallen Leaf Lake, California
84. May 2019 *The Opioid Epidemic: From Freud to Fentanyl*, The American Psychiatric Association Annual Meeting, San Francisco, California
85. Jul 2019 *Social Media and Device Addiction*, 27th Annual Pediatric Update, Stanford University School of Medicine, Stanford, California
86. Jul 2019 *Rethinking Opioid Tapers, Buprenorphine Induction, and Perioperative Buprenorphine*, Opioid Response Network Texas Grand Rounds National Webinar Series
87. Jul 2019 *Tapering Guidance for Opioids*, National Academy of Medicine webinar <https://nam.edu/event/webinar-tapering-guidance-for-opioids-existing-best-practices-and-evidence-standards/> ; <https://nam.edu/wp-content/uploads/2019/08/Tapering-webinar-two-pager-FINAL.pdf>.
88. Aug 2019 *Medical Cannabis: Clinical Issues*, 8th Annual Navigating Spine Conference, Stanford University School of Medicine, Stanford, California
89. Nov 2019 *Tapering Opioids: Compassionate Care or Punitive Policy*, AMERSA Conference, Boston, Massachusetts
90. Dec 2019 *From Freud to Fentanyl: The Opioid Epidemic as a Symptom of our Faltering Health Care System*, Southwestern Gynecologic Assembly 54th Annual

Meeting: Patient and Provider at Their Best: Caring for Patients and Yourself, Dallas, Texas

91. Mar 2020 *Dismantling the Addiction Industrial Complex*, 13th Annual Haas Healthcare Conference, "Foresight is 2020," San Francisco, California
92. Jun 2020, *From Freud to Fentanyl: The Opioid Epidemic as a Symptom of our Faltering Health Care System*, Alta Bates Grand Rounds, Berkeley, California
93. Aug 2020 *Cannabis: A Practical Clinical Approach*, 9th Annual Navigating Spine Conference, Stanford University School of Medicine, Stanford, California
94. Aug 2020 *What's Next in the Opioid Epidemic: How to Taper Long-Term Opioid Therapy*, The Align Conference Evidence in Motion, online conference
95. Oct 2020 *The Opioid Epidemic, An Update ... Plus A Word on Cannabis*, James O. Johnson Orthopedic Symposium, The Kaiser Permanente Group, online conference
96. Nov 2020 *Aging and Alcohol: How Much Is Too Much?* Avenidas Town Hall, Palo Alto, California
97. Dec 2020 *Chatham House Webinar: Freedom of Thought and Opinion in the Digital Age*, The Royal Institute of International Affairs Chatham House, 10 St James's Square, London, England
98. Dec 2020 *Benzodiazepines: A Crisis Hidden in Plain Sight*, American Academy of Addiction Psychiatry, San Antonio, Texas.
99. Jan 2021 *The Impact of Technology on Mental Health*, Q & A with Microsoft Interns, online panel discussion with Tim Kendall and Jaron Lanier
100. Jan 2021 *Addiction and Technology*, online guest speaker and panelist, University of Toronto Artificial Intelligence Conference, Toronto, California
101. Jan 2021 *Physicians with Addiction: Why it Happens and How to Help*, Department of Anesthesiology, Stanford Health Care, Kaweah Delta, California
102. Feb 2021 *The Neuroscience of Addiction*, Recovery Café, San Jose, California
103. Feb 2021 *Dopamine Nation: Finding Balance in the Age of Indulgence*, Luxembourg Stanford Alumni Association, Luxembourg
104. Feb 2021 *Social Media: Why It's Addictive and How to Use It in Healthier Ways*, National Association of Pediatric Nurse Practitioners, San Francisco, California
105. Mar 2021 *Social Media: Why It's Addictive and How to Use It in Healthier Ways*,

The Royal Institute of International Affairs Chatham House, 10 St James's Square, London, England

106. Mar 2021 *Dopamine Nation: Finding Balance in the Age of Indulgence*, Alpha Omega Alpha Visiting Professorship Grand Rounds, University of Nevada Medical School (Reno)
107. Mar 2021 *The Science of Addiction: What It Is, How It Affects Our Brains, and What We Can Do About It*, Stanford University Healthy Living Class, Stanford, California
108. Mar 2021 *Alcohol Use Disorder: How Much is Too Much?* Sage Eldercare, Bay Area, California
109. Apr 2021 *Caring for Ourselves as We Care for Patients with Substance Use Disorders*, San Mateo County Health Care System Wellbeing Series, Bay Area, California
110. May 2021 *Technology: Savior or Threat: A Panel Discussion*, How the Lights Get In Festival, The Institute of Art and Ideas, London, England
111. Jun 2021 *Social Media Addiction: Why It Happens and What To Do About It*, Grand Rounds at Mercy Fitzgerald Hospital, Philadelphia
112. Oct 2021 *The Kennedy Forum: A Panel Discussion with Jonathan Haidt on the Impact of Social Media on Mental Health*
113. Oct 2021 Mental Health Alliance of San Mateo County, *Dopamine Nation: Finding Balance in the Age of Indulgence*
114. Oct 2021 *Dopamine Nation: Finding Balance in the Age of Indulgence*, McCallie School, Chattanooga, Tennessee
115. Nov 2021 *Dopamine Nation: Finding Balance in the Age of Indulgence* for Young Presidents Organization (YPO), Fort Worth, Texas
116. Nov 2021 Alta Bates Grand Rounds, *Dopamine Nation: Finding Balance in the Age of Indulgence*, Berkeley, California
117. Nov 2021 *Confronting Global Health Challenges*, *Dopamine Nation*, Duke University, Durham, North Carolina
118. Nov 2021 *Dopamine Nation: Finding Balance in the Age of Indulgence* for Young Presidents Organization (YPO), Dallas, Texas
119. Feb 2022 *Dopamine Nation: Finding Balance in the Age of Indulgence* for Stanford

Faculty Help Series Lecture

120. Feb 2022 *Digital Addictions*, IPCAP's 20th National Convention, Philippines
121. Feb 2022 *Dopamine Nation: Finding Balance in the Age of Indulgence*, Eckerd College, St. Petersburg, Florida
122. Feb 2022 *Digital Addictions*, Keynote, Harvard College Project for Asian and International Relations, Boston, Massachusetts
123. Mar 2022 *Dopamine Nation: Finding Balance in the Age of Indulgence*, Santa Cruz County Health Services Agency
124. Mar 2022 *Dopamine Nation: Finding Balance in the Age of Indulgence* for YPO, Kansas City, Missouri
125. Mar 2022 *Dopamine Nation: Finding Balance in the Age of Indulgence*, University of Chicago Grand Rounds, Freedman Memorial Lecture, Chicago, Illinois
126. Apr 2022 *Dopamine Nation: Finding Balance in the Age of Indulgence*, Grand Rounds for Rush Medical School, Chicago, Illinois
127. Apr 2022 Panelist for Stanford's Human Centered Artificial Intelligence Annual Conference, Stanford University, Stanford, California
128. April 2022 *Dopamine Nation and the Neuroscience of Addiction*, Lavin Event, Case Western Reserve University, Cleveland, Ohio
129. May 2022 *The Neuroscience of Addiction*, The WellHouse Keynote Address, Stanford University, Stanford, California
130. May 2022 *Dopamine Nation: Finding Balance in the Age of Indulgence*, Health Matters, Stanford University Medical School, Stanford, California
131. May 2022 *Dopamine Nation: Finding Balance in the Age of Indulgence*, Carle Addiction Medicine Grand Rounds, Illinois
132. May 2022 *Dopamine Nation: Finding Balance in the Age of Indulgence*, National Association of Branch Campus Administrators, Stanford University, Stanford, California
133. May 2022 *Homelessness in California*, Panelist, SIEPR, Stanford University, Stanford, California
134. Jun 2022 *Logging into the Burden of Technology and Social Media on Mental Health*, University of Melbourne's student conference MDSC, Melbourne, Australia

135. Jul 2022 *Dopamine Nation :Finding Balance in the Age of Indulgence*, Lowcountry Mental Health Conference, Charleston, South Carolina
136. Aug 2022 *Dopamine Nation: Finding Balance in the Age of Indulgence*, Psych Club of Manipal Academy of Higher Education, Manipal, Karnataka, India
137. Aug 2022. *Resisting Digital Temptations: How AI Fuels Addiction*, Human Artificial Intelligence Congressional Bootcamp, Stanford University, Stanford, California
138. Aug 2022 *Dopamine Nation: Finding Balance in the Age of Indulgence*, UNSW Sydney during National Science Week, Sydney, Australia
139. Aug 2022 *Dopamine: A Practical Approach to Compulsive Overconsumption in a Reward-Overloaded World*, Kaiser Permanente Mental Health & Addiction Medicine Symposium, California
140. Oct 2022 *Dopamine in Conversation with Dr. Kevin McCauley*, Trauma and Addictions Conference, Las Vegas, Nevada
141. Oct 2022 The Digital Age of Vulnerability: Better Social Media & Mental Health, State University of New York Plattsburgh at Queensbury and State University of New York, Adirondack, Queensbury, New York
142. Oct 2022 *Dopamine Nation: Finding Balance in the Age of Indulgence*, International Association of Orofacial Myology (IAOM), Kansas City, Missouri
143. Nov 2022 PCSS Clinical Roundtable - *Drs. Andrew Kolodny and Anna Lembke - Buprenorphine and Chronic Pain*
144. Nov 2022 *A Neuroscience Informed Approach to Compulsive Overconsumption*, Louisiana State University Psychiatry Grand Rounds, Baton Rouge, Louisiana
145. Nov 2022 *Dopamine Fasting: A Neuroscience Informed Approach to Compulsive Overconsumption in a Dopamine Overloaded World*, the Global Exchange Conference, Orlando, Florida
146. Nov 2022 *Dopamine Nation: Finding Balance in the Age of Indulgence*, NotMYkids Annual Breakfast, Scottsdale, Arizona
147. Nov 2022 *Opioids and Opioid Use Disorder*, American College of Academic Addiction Medicine Didactic Series
148. Nov 2022 *How to Talk to Teens about Addiction*, The Glenbard Parent Series, Chicago, Illinois

149. Dec 2022 *Translating Addiction Science to Practice and Policy: A Dialogue*, Department of Psychiatry Grand Rounds, Stanford University, Stanford, California
150. Dec 2022 *How to Talk to Teens about Addiction*, Parents' Coalition of Bay Area High Schools, San Francisco, California
151. Dec 2022 *How to Talk to Teens about Addiction* Palo Alto and Gunn High School Parent Series, Palo Alto, California
152. Feb 2023 *Radical Honesty: How Telling the Truth Changes our Brains and Promotes Recovery* Keynote Address, Last Door Recovery Society, Calgary, Alberta, Canada
153. Feb 2023 *Dopamine Nation: A Neuroscience Informed Approach to Compulsive Overconsumption in a Dopamine-Overloaded World* Keynote Address, Parker University Annual Chiropractic Conference, Las Vegas, Nevada
154. Mar 2023 *Dopamine Nation: A Neuroscience Informed Approach to Compulsive Overconsumption in a Dopamine-Overloaded World* Live Healthier Longer Summit, Naples, Florida
155. Mar 2023 *Dopamine Nation: A Neuroscience Informed Approach to Compulsive Overconsumption in a Dopamine-Overloaded World*, Stanford Grad Alumni Day, Stanford, California
156. Mar 2023 *Dopamine Nation: A Neuroscience Informed Approach to Compulsive Overconsumption in a Dopamine-Overloaded World*, for Careers, Life, and Yale, New Haven, Connecticut
157. Apr 2023 *Dopamine Nation: A Neuroscience Informed Approach to Compulsive Overconsumption in a Dopamine-Overloaded World*, Slovenia Talk Fit4Kid International Scientific Conference Keynote Address, Slovenia
158. Apr 2023 *Dopamine Nation: A Neuroscience Informed Approach to Compulsive Overconsumption in a Dopamine-Overloaded World*, Stanford Continuing Studies, Stanford, California
159. Apr 2023 *Dopamine Nation: A Neuroscience Informed Approach to Compulsive Overconsumption in a Dopamine-Overloaded World*, Science and Cocktails, Copenhagen, Denmark
160. Apr 2023 *Social Media and Children's Mental Health*, Panelist, Jewish Family Services and Common Sense Media, Palo Alto, California
161. Apr 2023 *Dopamine Nation: A Neuroscience Informed Approach to Compulsive*

Overconsumption in a Dopamine-Overloaded World, Keynote, International Institute for Trauma and Addiction Professionals, Phoenix, Arizona

162. Apr 2023 *Dopamine Nation: A Neuroscience Informed Approach to Compulsive Overconsumption in a Dopamine-Overloaded World*, Keynote, Women Physicians' at Honor Health Foundation Keynote Address, Phoenix, Arizona
163. May 2023 *Dopamine Nation: A Neuroscience Informed Approach to Compulsive Overconsumption in a Dopamine-Overloaded World*, Common Ground and Sacred Heart Prep Keynote Address, Menlo Park, California
164. May 2023 *Dopamine Nation: A Neuroscience Informed Approach to Compulsive Overconsumption with a Focus on Social Media*, DuPage County Health Department, Glenellyn, Illinois
165. May 2023 *Dopamine Nation: A Neuroscience Informed Approach to Compulsive Overconsumption in a Dopamine-Overloaded World*, “Change” Psychology Conference, Milan, Italy
166. Jun 2023 *Dopamine Nation: A Neuroscience Informed Approach to Compulsive Overconsumption*, University Medical Center Grand Rounds, Chicago, Illinois
167. Jun 2023 *Dopamine Nation: A Neuroscience Informed Approach to Compulsive Overconsumption*, Reeves Warm, MD Endowed Lecturer at University Hospitals in Cleveland, Ohio
168. Jun 2023 *The Potential Harm of Social Media*, Representative DeSaulnier Town Hall, California
169. Jul 2023 *A Child’s Mind on Tech*, Center for Innovation and Resources, California
170. Jul 2023 *Dopamine Nation: A Neuroscience Informed Approach to Compulsive Overconsumption*, Ohio State Addiction Studies Institute Keynote Address
171. Jul 2023 *Dopamine Nation: A Neuroscience Informed Approach to Compulsive Overconsumption*, Parker Seminar Series “Neuron” Keynote Address, Dallas, Texas
172. Aug 2023 *Dopamine Nation*, The Institute of Art and Ideas, London, United Kingdom
173. Aug 2023 *The Plenty Paradox*, The Institute of Art and Ideas Panel on Desire, Struggle, and the Search for Wellbeing, London, United Kingdom
174. Aug 2023 *Addiction and Digital Media*, Human-Centered Artificial Intelligence Congressional Bootcamp, Stanford, California

175. Aug 2023 *The Impact that Technology, Social Media, and Digital Addiction Have on our Health and Wellbeing*, Dakota Medical Foundation Health and Wellbeing Summit Keynote Address, Fargo, North Dakota
176. Aug 2023 *Opioids and Opioid Use Disorder: A Review*, The American College of Academic Addiction Medicine (ACAAM) Didactic Lecture Series
177. Sep 2023 *Dopamine Fasting: An Early Intervention for Compulsive Overconsumption in the Digital Age*, California Society of Addiction Medicine (CSAM) Keynote Address, San Diego, California
178. Oct 2023 *Radical Honesty: How Telling the Truth Promotes Recovery*, International Conference for Secular AA Keynote Address
179. Oct 2023 *Substance Use Disorders and Mood Disorders*, 19th Annual Stanford Mood Disorders Education Day, Translating Emerging Treatments for Mood Disorders into Practice
180. Oct 2023 “*DOPAMINE*”: *A Neuroscience Informed Approach to Dopamine Fasting in the Digital Age*”, U.S. Marines Commanders Huddle, Norfolk, Virginia
181. Oct 2023 “*DOPAMINE*”: *A Neuroscience Informed Approach to Dopamine Fasting in the Digital Age*,” Lifestyle Medicine Annual Conference, Denver, Colorado
182. Nov 2023 Annual Feldman Lecturer for the 38th Feldman Lecture Series, composed of three lectures by a single scholar over the course of one day, Edmonton Canada. Feldman Lectures: 1.) The Plenty Paradox: How Abundance Has Made Us More Vulnerable to Addiction and Other Forms of Suffering; 2.) The Gap Between Evidence and Promotion: How Today’s Discourse on Cannabis and Psychedelics Echoes Two Decades of Misleading Opioid Marketing; 3.) Radical Honesty, Narcissism, and Surrender: Psychospiritual Aspects of Addiction and Recovery
183. Nov 2023 *Dopamine Nation: Finding Balance in the Age of Indulgence*, HSM+, Sao Paulo, Brazil
184. Dec 2023 *Dopamine Nation: Finding Balance in the Age of Indulgence* Genius Network, Phoenix, Arizona

Media Appearances (2015-present)

1. Apr 2015 *Public Radio International-To the Point*, hosted by Warren Olney, prescription opioid and heroin abuse in America, invited expert.
2. Oct 2015 *OnPoint, National Public Radio*, the prescription opioid epidemic, invited expert

3. Mar 2016 *Al Jazeera* live programming, the new CDC guidelines on opioid prescribing, invited expert
4. Mar 2016 *KCBS Radio*, San Francisco, the new CDC guidelines on opioid prescribing, invited expert
5. Apr 2016 *The Today Show* on NBC, NY, New York, appearance with Mehmet Oz discussing “The Opioid Epidemic”
6. May 2016 *KCBS Radio*, San Francisco, the FDA approves Probuphine, a buprenorphine implant, invited expert
7. Oct 2016 *Opioids: Last Week Tonight with John Oliver* (HBO),
<https://www.youtube.com/watch?v=5pdPrQFjo2o>
8. Nov 2016 *Sirius XM Radio*, invited guest to discuss *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop*
9. Nov 2016 *Wisconsin Public Radio's "Central Time" Show*, invited guest to discuss *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop* <http://www.wpr.org/connection-between-illicit-drugs-and-doctors>
10. Nov 2016 *The Healthcare Policy Podcast with David Introcaso*, invited podcast to discuss *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop* <http://www.stitcher.com/podcast/david-introcaso-2/the-healthcare-policy-podcast/e/what-explains-the-opioid-epidemic-dr-anna-lembke-discusses-48277528>
11. Nov 2016 *Straight Talk MD with Frank Sweeny* invited podcast to discuss *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop* <http://straighttalkmd.com/podcast/drug-dealer-md-opioid-epidemic-anna-lembke-md/>
12. Nov 2016 *Conversation on Healthcare Reach MD Radio*, invited guest to discuss *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop* <http://www.chcradio.com/episode.php?id=360>
13. Nov 2016 *KALW Local Public Radio*, invited guest to discuss *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop* <http://kalw.org/post/city-visions-how-doctors-fueled-opioid-epidemic#stream/0>
14. Nov 2016 *Forum with Michael Krasny (KQED-FM)* invited panelist to discuss “The Surgeon General’s Report: Facing Addiction in America,”
<https://ww2.kqed.org/forum/2016/11/28/addiction-is-illness-not-a-moral-failing-says-surgeon-general/>

15. Nov 2016 *Stanford Scope 1:2:1 Podcast with Paul Costello* invited podcast to discuss *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop* <http://med.stanford.edu/news/all-news/one-to-one/2016/drug-dealer--md--how-physicians-are-fueling-the-opioid-epidemic.html>
16. Dec 2016 *Straight Talk MD with Frank Sweeny* invited podcast to discuss "The Surgeon General's Report: Facing Addiction in America,"
<https://www.acast.com/straighttalkmd/facing-addiction-in-america-the-surgeon-generals-report>
17. Dec 2016, *NPR Fresh Air with Terry Gross* 'Drug Dealer, M.D.': Misunderstandings And Good Intentions Fueled Opioid Epidemic invited interview to discuss *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop* <http://www.npr.org/sections/health-shots/2016/12/15/505710073/drug-dealer-md-contends-that-well-meaning-docs-drove-the-opioid-epidemic>
18. Dec 2016 *The Jimmy Moore Show* invited podcast to discuss *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop*
19. Feb 2017 *WILK Radio, The Sue Henry Show* invited guest to discuss *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop*
20. Feb 2017 Reach, MD with host John J. Russell, MD invited guest to discuss *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop* <https://www.reachmd.com/programs/book-club/drug-dealer-MD-how-doctors-duped-patients-hooked-why-so-hard-stop/8512/>
21. Mar 2017 *MSNBC with Chris Hayes*, live guest appearance to discuss the opioid epidemic in West Virginia <https://www.youtube.com/watch?v=0Ar30-kDSUQ&sns=em>
22. Mar 2017 *Stanford Law School Wellness Project Podcast*, with Dr. Joseph Bankman and Dr. Sarah Weinstein, to discuss *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop* www.law.stanford.edu/wellnessproject
23. Mar 2017 *SiriusXM's Tell Me Everything with John Fugelsang*, invited guest to discuss *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop*
24. Jun 2017 *The Texas Standard* Radio Show, invited guest to discuss the FDA decision to ask Endo Pharmaceuticals to withdraw Opana ER from the market <http://www.texasstandard.org/stories/fda-wants-painkiller-favored-by-opioid-abusers-off-the-market/>
25. Jun 2017 *NBC Television Sunday Night with Megyn Kelly*, invited expert to discuss

marijuana legalization <http://www.nbc.com/sunday-night-with-megyn-kelly/video/sunday-night-with-megyn-kelly/3536915>

26. Jun 2017 KCBS Radio in San Francisco invited guest to discuss the ongoing opioid epidemic
27. Jul 2017 KPCC's AirTalk with host Larry Mantle, live guest appearance to discuss the opioid crisis <http://www.scpr.org/programs/airtalk/2017/07/20/58084/in-the-context-of-the-opioid-crisis-doctors-discuss/>
28. Jul 2017 Jose Calderon Mindful Psychiatry Live Radio and Podcast, invited guest to discuss *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop* <http://wholebodymentalhealth.libsyn.com/hard-pill-to-swallow-drug-dealer-md-with-dr-anna-lempke-md-7-5-17>
29. Aug 2017 KQED Forum with Michael Krasny Live Radio Broadcast, invited guest to discuss *Rise in High-Risk Drinking a Public Health Crisis, New Study Finds*
30. Aug 2017 MSNBC with Chris Hayes, live guest appearance to discuss President Trump's inaction on the opioid epidemic <http://www.msnbc.com/all-in/watch/donald-trump-has-done-nothing-on-the-opioid-crisis-1032009795986>
31. Sep 2017 KPCC's AirTalk with host Larry Mantle, live guest appearance to discuss CVS Pharmacy's announcement it will limit opioid prescriptions to seven days for certain conditions for new patients seeking drugs for pain relief.
<http://www.scpr.org/programs/airtalk/2017/09/22/59288/how-much-would-cvs-s-7-day-limit-on-painkiller-pre/>
32. Oct 2017 BBC NewsHour on BBC World Service radio on the opioid epidemic with host James Menendez <http://www.bbc.co.uk/programmes/w172vghc8jkrr3g>
33. Oct 2017 NBCUniversal live in the studio with Dr. John Torres, One Nation Overdosed: Doctors Speak Out <http://qlnk.io/ql/59f0f15be4b0945e5d8ff73f>
34. Oct 2017 KPIX 5 CBS San Francisco Trump declares the opioid epidemic a public health emergency <http://sanfrancisco.cbslocal.com/video/3752604-critics-say-trumps-opioid-announcement-doesnt-go-far-enough/>
35. Oct 2017 KPIX 5 CBS San Francisco commentator on bay area parents using marijuana <http://sanfrancisco.cbslocal.com/2017/11/04/marin-mom-marijuana-makes-her-better-parent/>
36. Jan 2018 KQED with Brian Watt on "smartphone addiction"
<https://soundcloud.com/kqed/investors-urge-apple-to-take-action-to-curb-digital-device-overuse-among-children>

37. Feb 2018 Sirius/XM radio with Clare Marie Gauthier, Co-Host, Dave Nemo Weekends, RadioNemo of North America, on the opioid epidemic and *Drug Dealer, MD: How Doctors Were Duped, Patients Got Hooked, and Why It's So Hard to Stop*
38. Feb 2018 KQED News radio, report on Purdue Pharma's decision to stop marketing opioids directly to doctors
39. Feb 2018 NPR Smartphone Detox, How to Power Down in a Wired World
<https://www.npr.org/sections/health-shots/2018/02/12/584389201/smartphone-detox-how-to-power-down-in-a-wired-world>
40. Mar 2018 Sirius/XM Radio with Clare Marie Gauthier, Co-Host, Dave Nemo Weekends, RadioNemo of North America, on addiction treatment
41. Mar 2018 Sirius/XM Radio "Doctor Radio", on the silent benzodiazepine epidemic
42. Mar 2018 Sirius XM Radio: POTUS Channel 124, "Steele & Ungar", on new Center for Medicare and Medicaid Services regulations to restrict opioid prescribing
43. Mar 2018 KPCC's AirTalk with host Larry Mantle, live guest appearance to discuss new Center for Medicare and Medicaid Services regulations to restrict opioid prescribing
44. Mar 2018 Science VS. with Rose Rimler, "Opioids: Kicking America's Addiction"
<https://www.gimletmedia.com/science-vs/opioids-kicking-americas-addiction#episode-player>
45. Apr 2018 KQED Forum with Michael Krasny, Medical Community Divided On Medicare's Policy to Shorten High-Dose Opioid Prescriptions,
<https://www.kqed.org/forum/2010101864587/medical-community-divided-on-medicares-policy-to-shorten-high-dose-opioid-prescriptions>
46. May 2018 Radio Health Journal with Reed Pence: The Opioid Epidemic,
http://mediatracks.com/shows/RHJ_18-17.mp3
47. May 2018 Straight Talk MD: Health | Medicine | Healthcare Policy | Health Education | Anesthesiology, The Cannabis Conversations: Part II with Anna Lembke MD <http://straighttalkmd.com/podcast/the-cannabis-conversations-part-ii-with-anna-lembke-md/>
48. Jun 2018 The Future of Everything with Russ Altman (Stanford Radio), 06/18/18. In a recent segment on Stanford Radio, Russ Altman discussed the rise of the opioid epidemic in the United States with Anna Lembke. <https://soundcloud.com/user-458541487/facing-addiction-with-guest-anna-lembke>
49. Jul 2018 NBC News with Dr. John Torres to discuss

benzodiazepines https://www.nbcnews.com/nightly-news/video/is-anti-anxiety-medication-the-next-u-s-drug-crisis-1287215683720?cid=eml_onsite

50. Oct 2018 NOVA/PBS documentary ADDICTION, Produced, Directed and Written by Sarah Holt, Co-producer Julie Crawford <http://www.holtproductions.org>; <http://www.pbs.org/wgbh/nova/body/addiction.html>
51. Mar 11, 2019 Spectrum News In Focus, What's Causing the Opioid Crisis, with Renee Eng, <https://spectruminfocus.com/section/in-focus/in-focus/2019/03/11/in-focus--what-s-causing-the-opioid-crisis#>
52. Apr 29, 2019 KALW City Visions, California's drug rehabilitation industry, <https://www.kalw.org/post/city-visions-reforming-californias-drug-rehabilitation-industry#stream/0>
53. May 20, 2019 Groundless Ground podcast with Lisa Dale Miller, Chronic Pain, Dual-Diagnosis and Addiction Treatment, <https://groundlessground.com/episodes/anna-lembke-chronic-pain-dual-diagnosis-and-addiction-treatment>
54. Jun 24, 2019 KCBS News Radio San Francisco 10 Q's w/Stan & Susan, to discuss rising rates of fentanyl overdose in San Francisco <https://kcbsradio.radio.com/blogs/margie-shafer/fentanyl-becomes-san-francis>
55. Jul 18, 2019 Russian Television News (RT International) "The Opioid Epidemic in the United States: Where Are We Now?" <https://www.youtube.com/watch?v=KP-Vn2d6LWk>
56. Aug 26, 2019 Russian Television News (RT International) on the Oklahoma vs Johnson & Johnson opioid litigation <https://youtu.be/sNKrMYIrPtE>
57. Aug 29, 2019 Monocle 24 Radio in London on the opioid crisis in follow up to the outcome of the Oklahoma vs Johnson & Johnson opioid litigation
58. Sep 2019 American Journal of Psychiatry Residents' Journal podcast series <http://ajpresidentsjournal.apapublishing.libsynpro.com>
59. Sep 2019 *The Voice of Medicine* podcast, m.hulik@radiolutions.com
60. Oct 2019 *This is Life with Lisa Ling*, Benzodiazepines, <https://www.cnn.com/2019/10/04/health/benzodiazepines-this-is-life-with-lisa-ling/index.html> ; <https://itunes.apple.com/us/tv-season/this-is-life-with-lisa-ling-season-6/id1480545936>
61. Oct 2019 *Straight Talk with Frank Sweeny*, Benzodiazepines, <https://podcasts.apple.com/us/podcast/straight-talk-md-health-medicine-healthcare->

- policy/id1060256849#episodeGuid=78d97afe7ea14dac8261193a2aa3d69 ;
<https://open.spotify.com/episode/1jrtfq60dmraRnzTtsUNeb?si=jO2RZqjDTM-c1VJUVsWcuw>
62. Dec 2019 CBSN Bay Area, 12/09/19 *Medical Monday: How to avoid overindulging in alcohol during the holiday season and setting healthy drinking limits*
<https://sanfrancisco.cbslocal.com/live/cbsn-bay-area/video/3439448-20191209162159-medical-mondays-dr-anna-lembke-addiction-recovery-relapse-triggers/>
63. Feb 2020 Netflix's "The Pharmacist" explores how pill mill doctors fanned the flames of the country's opioid epidemic by flagrantly overprescribing three particular drugs. Anna Lembke, associate professor of psychiatry and behavioral sciences, is quoted in this piece. <https://www.oxygen.com/true-crime-buzz/oxycontin-soma-xanax-the-holy-trinity-from-the-pharmacist-explained>
64. Feb 2020 Anna Lembke appeared on the Netflix documentary series *The Pharmacist*.
<https://www.netflix.com/title/81002576>
65. Feb 2020 *What Makes Up Your Mind: Opioids and Addiction with Dr. Anna Lembke*, Stanford University Department of Psychiatry Podcast,
<https://m.soundcloud.com/stanfordpsy/february2020/s-kBmxv>
66. Feb 2020 Sirius XM Doctor Radio, invited guest to discuss benzodiazepines,
 Scott.Uhing@SiriusXM.com
67. Apr 2020 *Mental Health During Quarantine*, Doc to Doc with Dr. John Torres, Medical Correspondent NBC News and MSNBC, Facebook Live,
<https://www.facebook.com/NBCNews/videos/doc-to-doc-coronavirus-conversation-with-dr-anna-lembke/280171329668121/>
68. Jul 2020 *The Therapy Show* with Dr. Bridget Nash,
<https://www.therapyshow.com/podcasts/episode/2986f561/drug-dealer-md-author-dr-anna-lembke-discusses-the-latest-treatments>
69. Aug 2020 *How is the Pandemic Affecting People Struggling with Addiction*, Stanford Medicine Scope Interview with Paul Costello
<https://scopeblog.stanford.edu/2020/08/11/how-the-pandemic-is-affecting-people-struggling-with-addiction/>
70. Aug 2020 *How the Pandemic is Affecting People Struggling with Addiction*, Stanford Medicine's Paul Costello speaks with Anna Lembke, MD, Associate Professor of psychiatry and behavioral sciences, for a 1:2:1 podcast about the impact of the pandemic on people with drug and alcohol addiction.
<https://scopeblog.stanford.edu/2020/08/11/how-the-pandemic-is-affecting-people-struggling-with-addiction/>

71. Sep 2020 *COVID-19 and Mental Health with Anna Lembke MD* from Straight Talk MD with Frank Sweeny on Apple Podcasts
<https://podcasts.apple.com/us/podcast/straight-talk-md/id1060256849?i=1000489628559>
72. Sep 2020 Anna Lembke appeared on the Netflix documentary *The Social Dilemma*, explaining that "social media is a drug" which exploits the brain's evolutionary need for interpersonal connection. <https://www.thesocialdilemma.com/reclaim-your-screen-time/>
73. Sep 2020 *Officers, tow truck driver released from hospital after Fentanyl exposure scare on Golden Gate Bridge.* Dr. Anna Lembke was interviewed regarding fentanyl exposure.
<https://abc7news.com/chp-golden-gate-officers-fentanyl-exposure-bridge-crash-sf-car-crahs/6421359/>
74. Oct 2020 *Anna Lembke – Episode 55*, Rallen's Rant <https://soundcloud.com/richie-allen-3/anna-lembke-episode-55>
75. Nov 2020 *Our Social Dilemma: My Conversation with Dr. Anna Lembke* from 20 Minutes with Bronwyn <https://podcasts.podinstall.com/twentyminuteswithbronwyn-20-minutes-bronwyn/202011031100-our-social-dilemma-my-conversation-dr-anna-lembke.html>
76. Nov 2020 *The Social Dilemma of a Nation Addicted to Dopamine (ft. Dr. Anna Lembke)* from Designed to Heal. <https://podcasts.apple.com/us/podcast/Designed-to-heal/id1479146995>
77. Dec 2020 *Dr Anna Lembke - Addiction and Social Media*, Woven Experiences by Marissa Monnig <https://anchor.fm/marissa-monnig/episodes/Dr-Anna-Lembke---Addiction-and-Social-Media-en7kma>
78. Jan 2021 *The Social Dilemma: Preconceived with Zale Mednick* (Apple Podcasts)
<https://link.chtbl.com/FYGb94jM>
79. Jan 2021 *PharmedOut at Georgetown University Panel Discussion w/ Dr. Anna Lembke* <https://www.youtube.com/watch?v=iCaF2JSVhdg&t=6s>
80. Feb 2021 The “Addict” in All of Us: The Surprising Places Where Addiction Exists, Dr. Anna Lembke, MD, The Bottom Line Advocate With Sarah Hiner <https://bottomlineinc.com/health/addiction/the-addict-in-all-of-us-the-surprising-places-where-addiction-exists-sarah-hiner-talks-to-addiction-specialist-anna-lembke-md>
81. Feb 2021 Anna Lembke appeared on the HBO Panel regarding the documentary *The*

Crime of the Century on the opioid crisis

82. Mar 2021 National Society of High School Scholars Panel with Jeff Orlowski and Tim Kendall on *The Social Dilemma* <https://www.nshss.org/events/past-webinars/>
83. Mar 2021 *Insight on the Opioid Crisis: An Interview with Dr. Anna Lembke*, The Power of the Patient Project
<https://www.youtube.com/watch?v=TtMv6yNl4Uo&t=60s>
84. Mar 2021 *Dopamine Nation: Finding Balance in the Age of Indulgence*, The Parent Venture (Parent Education), Menlo Park, CA
https://www.youtube.com/watch?v=rHI4N_lShJI&t=14s
85. Apr 2021 Anna Lembke appeared on the HBO documentary *The Crime of the Century* on the opioid crisis
<https://www.youtube.com/watch?v=nK1avWWjiZ4&t=76s>
86. Apr 2021 *Dopamine Nation: Social Media, Persuasion, and the Science of Addiction*, Anna Lembke in conversation with Aza Raskin, Aspen Brain Institute Expert Series <https://www.youtube.com/watch?v=T4yMzP5oCDA>
87. May 2021 *Recovery: The Hero's Journey (The Epidemic of Overprescribing Opioids and Benzodiazepines)* Interviewed by Dr. Patricia Harrigan on Mental Health for The Voice of America <https://www.voicemerica.com/episode/131102/the-epidemic-of-overprescribing-opioids-and-benzodiazepines>
88. Jul 2021, Best Practices for Opioid Tapering, Compass Opioid Steward Program, <https://directory.libsyn.com/episode/index/id/19758497>
89. Aug 2021 Interview with Dr. David Perlmutter, MD Empowering Neurologist Podcast, about my book *Dopamine Nation*
90. Aug 2021 Interview with Terri Gross, NPR's *Fresh Air*, about my book *Dopamine Nation*
91. Aug 2021 Interview with Tucker Carlson, *The Tucker Carlson Show* FOX News, about my book *Dopamine Nation*
92. Aug 2021 Interview with Rich Roll, *The Rich Roll Podcast*, about my book *Dopamine Nation* <https://www.richroll.com/podcast/anna-lembke-623/>
93. Aug 2021 *KALW Radio*, Interview on The State of the Bay, about my book *Dopamine Nation* <https://www.kalw.org/show/state-of-the-bay/2021-08-29/the-neuroscience-of-addiction-san-franciscos-corruption-sfjazz-high-school-all-stars>
94. Aug 2021 *Laurie Interviews Dr. Anna Lembke about Addictions & How We All Have*

Them, The Laurie DeYoung Show, <https://wpoc.iheart.com/featured/the-laurie-deyoung-show/content/2021-08-26-laurie-interviews-dr-anna-lembke-about-addictions-how-we-all-have-them/>

95. Aug 2021 *Is Instagram a Drug?: Dr. Anna Lembke*, SuperAge: Live Better podcast <https://podcasts.apple.com/us/podcast/is-instagram-a-drug-dr-anna-lembke/id1514482663?i=1000533053656>
96. Aug 2021 *Dr. Anna Lembke Understanding & Treating Addiction, Episode 33*, Huberman Lab podcast, <https://hubermanlab.libsyn.com/dr-anna-lembke-understanding-treating-addiction-episode-33>
97. Aug 2021 *On the Podcast: Leigh Montville, Robert Meyer and Dan Koeppel, and Anna Lembke*, This is the Author <https://www.penguinrandomhouseaudio.com/blog/on-the-podcast-leigh-montville-robert-meyer-and-dan-koeppel-and-anna-lembke/>
98. Aug 2021 *Tech, Social Media & Addiction – Anna Lembke*, Engineer-Mind podcast <https://www.youtube.com/watch?v=qIEFb0spXRY>
99. Aug 2021 *Anna Lembke: Dopamine & Digital Addiction*, Singularity Radio <https://anchor.fm/singularity-radio/episodes/FBL24---Anna-Lembke-Dopamine--Digital-Addiction-e16eso2>
100. Aug 2021 *Overcoming Social Media Addiction*, Mind Espresso with Scott Engler <https://podcasts.apple.com/us/podcast/overcoming-social-media-addiction/id1460146095?i=1000533877661>
101. Aug 2021 *Dr. Anna Lembke: Finding Balance in a Dopamine-Overloaded World*, The Courageously. U Podcast <https://courageouslyu.com/anna-lembke/>
102. Aug 2021 *Dopamine Nation with Anna Lembke MD*, Straight Talk MD with Frank Sweeny <https://straighttalkmd.com/podcast/dopamine-nation-with-anna-lembke-md/>
103. Aug 2021 *Anna Lembke MD: social media is a drug*, Northstar Unplugged, <https://www.northstarsleepschool.com/anna-lembke-md>
104. Aug 2021 *Finding Balance in the Age of Indulgence: With Guest Dr. Anna Lembke*, The Rick Ungar Show <https://www.rickungarshow.com/finding-balance-in-the-age-of-indulgence-with-guest-dr-anna-lembke/>
105. Sep 2021 Interview with Joe Rogan, *The Joe Rogan Experience*, about my book *Dopamine Nation*
106. Sep 2021 *The Correlation Between the Opioid Epidemic and Social Media with Dr. Anna Lembke*, Adjusted Reality podcast,

<https://www.buzzsprout.com/1220486/9097921>

107. Sep 2021 *Dr. Anna Lembke | Dopamine, Addiction, Pleasure and Pain, Brokenness & The Importance of Truth, Freedom Pact*
<https://www.youtube.com/watch?v=dbxalFNVsD0>

108. Sep 2021 *How We Became A Dopamine Nation with Anna Lembke, M.D.*, Chef AJ Live <https://www.youtube.com/watch?v=VLImiOxEQKU>

109. Sep 2021 *Are You Addicted To Your Phone?*, Viewpoints Radio
<https://www.youtube.com/watch?v=GIpvECU61us>

110. Sep 2021 *Dr. Anna Lembke, Medical Director of Addiction Medicine at Stanford University on "Dopamine Nation,"* Neuroscience Meets Social and Emotional Learning Podcast <https://www.youtube.com/watch?v=5Pu82wZRZwo>

111. Sep 2021 *How our smartphones are turning us into dopamine junkies*, Radio New Zealand <https://www.rnz.co.nz/national/programmes/sunday/audio/2018812004/how-our-smartphones-are-turning-us-into-dopamine-junkies>

112. Sep 2021 *Dr. Anna Lembke – Dopamine Nation; Why We're Addicted*, ManTalks
<https://www.youtube.com/watch?v=9IPrXhE-FUE>

113. Sep 2021 *Ep. 32: Dopamine Nation by Dr. Anna Lembke*, Billboard Happiness <https://podcasts.apple.com/no/podcast/ep-32-dopamine-nation-by-dr-anna-lembke/id1448644391?i=1000534719995>

114. Sep 2021 *Regulating the dopamine hit from gaming*, Hack
<https://www.abc.net.au/triplej/programs/hack/hack/13518258>

115. Sep 2021 *KRTS Radio, Dr. Anna Lembke: Regulating dopamine production*, <https://soundcloud.com/550ktrs/dr-anna-lembke-regulating-dopamine-production>

116. Sep 2021 *Dr. Anna Lembke on The Zeitgeist, A Mighty Blaze*
<https://www.youtube.com/watch?v=L4VBpCQ2XtI>

117. Sep 2021 *KPIX 5 CBS UPDATE: DEA Issues Safety Alert As San Francisco Fentanyl Seizures Soar* <https://sanfrancisco.cbslocal.com/2021/09/28/dea-drug-enforcement-administration-san-francisco-fentanyl-seizures/>

118. Sep 2021 *Experts Say TV Binge-Watching Feels Like A Drug, Reset with Sasha-Ann Simmons* <https://www.wbez.org/stories/experts-say-tv-binge-watching-feels-like-a-drug/24fefcf7-925b-4e92-8b51-5b4c5c0abbc0>

119. Oct 2021 *Anna Lembke - Dopamine Nation, The Hidden Why*
<https://soundcloud.com/leigh-martinuzzi/1007-anna-lembke-dopamine-nation>

120. Oct 2021 *Dopamine Addiction featuring Dr. Anna Lembke*, Rehab Road Trips
https://www.youtube.com/watch?v=j0Qzbfl4q_k
121. Oct 2021 BNC News The Dark Side of Social Media
<https://www.facebook.com/BNCNews/videos/270205431643009/>
122. Oct 2021 *Anna Lembke*, Food Junkies Podcast
<https://podcasts.apple.com/ca/podcast/food-junkies-podcast/id1547705773>
123. Oct 2021 Podcast #745: *Do You Need to Take a Dopamine Fast?*, Art of Manliness Podcast <https://www.artofmanliness.com/health-fitness/health/do-you-need-to-take-a-dopamine-fast/>
124. Oct 2021 1-hour interview with Tucker Carlson, featured on Fox Nation *Tucker Carlson Today*
125. Oct 2021 *The World Tonight* with Kelly Wright and Nayyera Haq
126. Week of Oct 11, 2021
- a. CNN New Day Atlanta, Georgia
 - b. Russel Brand Under the Skin
 - c. Metro.co.uk's mental health podcast, Mentally Yours
 - d. Danny Zederman Armchair Nutritionist, WMVP-AM in Chicago ESPN
 - e. Nervous Habits Podcast
 - f. Cool Science Radio
 - g. Impact Theory Podcast
127. Week of Oct 18, 2021
- a. Sirius XM Doctor Radio
 - b. Melissa Monte Mindlove podcast
 - c. The Rational Reminder podcast
 - d. Modern Wisdom podcast
 - e. Positive Sobriety podcast
 - f. Wise Traditions podcast
 - g. How Humans Work podcast
128. Week of Oct 25, 2021
- a. The Ben Shapiro Show
 - b. Status Check with Mike Spivey
 - c. Rehab Confidential
 - d. Michael Gervais Finding Mastery podcast
 - e. I Am Driven podcast
 - f. Mark Bell's Power Project
 - g. The Bill Martinez Show
 - h. Superhumanize Podcast with Ariane Sommer

- i. Interview with Tom Swarbrick on UK radio station LBC <https://www.lbc.co.uk/>
 - j. Impact Factor Podcast
 - k. Brainwash Festival in Amsterdam
 - l. Brave New World Podcast
129. Week of Nov 1, 2021
- a. Unsiloed podcast
 - b. Austin McClinton podcast
 - c. Mindful in May Podcast
 - d. Freedom Matters Podcast
 - e. Highway to Health on Sirius XM radio
 - f. Yvette Le Blowitz for the Spait Girl Podcast (Australia)
 - g. ABC Radio National's All in the Mind program (Australia)
 - h. John Byren Dig Life Deep Podcast
 - i. Phoenix arts, science, and cultural salon with Thomas Toulon
130. Week of Nov 8, 2021
- a. Welcome Home Podcast
 - b. AT Banter Podcast
 - c. Dr. Trish Leigh Podcast
 - d. Trey Elling Books on Pod
 - e. Sober Curious Podcast
 - f. Endogenius Ahmed Nayel Podcast
131. Week of Nov 15, 2021
- a. Lauri Marbas Podcast
 - b. San Francisco KCBS In Depth Interview
 - c. Clint Malley Podcast
 - d. CNN Christine Koh interview
132. Week of Nov 22, 2021
- a. Dr. Chatterjee Podcast (UK)
 - b. University of Edinburgh Gregor Thomson podcast
 - c. Allison Heiliczer Webinar in Hong Kong
 - d. Sober Powered Podcast with Gillian Tietz
133. Week of Nov 29th, 2021
- a. Blumatterproject Podcast
 - b. Wise Traditions Podcast
 - c. Next Big Idea Podcast with Rufus Griscom
 - d. Soberful Podcast
 - e. Parks and Recreation, Spokane, WA
 - f. Tom Foxley Podcast
 - g. The Parent Venture Webinar with Charlene Margot
 - h. Derek Burnett from Bottom Line

- i. Mark Pearson and Tracy Wood Podcast
 - j. Empowered Relationship Podcast with Dr. Jessica Higgins
 - k. Resilient Recovery Podcast
134. Week of Dec 6th, 2021
- a. Body and Soul Healthy Podcast (Australia)
 - b. Brian Mann NPR
 - c. Jay Martin Cambridgehouse Podcast
 - d. Talking to Teens Podcast
 - e. Tully Podcast
135. Week of Dec 13th, 2021
- a. Best of Belfast Podcast (UK)
 - b. Ukrainian popular science media Kunsht (<https://kunsht.com.ua/>)
 - c. The Breakfast Show Voice of Islam Radio Station
 - d. Dan Pierce Book Club
 - e. Psychologists off the Clock with Diana Hill
136. Week of Dec 20th, 2021
- a. Science Studio
 - b. Shin Suzuki, Reporter, BBC News Brasil;
<https://g1.globo.com/saude/sexualidade/noticia/2021/12/28/como-pornografia-afeta-o-cerebro-e-habitos-sexuais-de-jovens-como-a-cantora-billie-eilish.ghtml>
137. Week of Dec 27th, 2021
- a. Win Today with Christopher Cook Podcast
 - b. KCBS All News Radio with Mary Hughes
138. Week of Jan 3rd, 2022
- a. Roy Ben The Genuinely Interested Podcast
 - b. IMS Interview with Nervo (UK)
 - c. GovCon Different Podcast
139. Week of Jan 10th, 2022
- a. Healthier Together Podcast
 - b. The Melanie Avalon Biohacking Podcast
 - c. Louie B. Brainfood from the Heartland radio
140. Week of Jan 17th, 2022
- a. The Garden in London (UK)
 - b. Edukitchen Podcast (Rotterdam)
 - c. Drew and Liv Podcast
 - d. Preconceived Podcast with Zale Mednick
 - e. Kelly Brown Heart Media
 - f. Nimah Gobir Mindshift Podcat for NPR

- g. Lindsay Crouse Opinion Editor NYTs
141. Week of Jan 24th, 2022
- a. Interview with Giuliano Il Venerdì (La Repubblica) - launch in Italy
 - b. Gary Collins Podcast
 - c. Metaphysical Milkshake Podcast with Rainn Wilson and Reza Aslan (Kast Media)
142. Week of Jan 31st, 2022
- a. Peter Bregman Podcast
 - b. Storybox Australia Podcast
 - c. Think Unbroken Podcast
 - d. Bradford Pope McArthur Is American Declining interview for docuseries
 - e. Infotrack Radio Tour
143. Week of Feb 7th, 2022
- a. Jitender Kumar, Central European Institute of Technology, BRNO, Czech Republic
 - b. Keep Talking Podcast
 - c. A Writer Helping Writers Thrive Podcast
144. Week of Feb 14th, 2022
- a. Interview with Daniela Gassmann, editor of Süddeutsche Zeitung Magazin, the weekly supplement of Süddeutsche Zeitung, Germany's biggest daily newspaper.
 - b. Pathways Radio with Paul O'Brien
145. Week of Feb 21st, 2022
- a. Interview with Andreas Bättig from Switzerland's *Tagesanzeiger, Bernerzeitung*
 - b. Simple Families Podcast
 - c. Muscle for Life Podcast
 - d. ACE Women's Network Keynote Speaker in Georgia
 - e. Tech Addiction Investor Roundtable (London)
 - f. The Weekend University (London)
146. Week of Feb 28th, 2022
- a. Watching American, NPR Affiliate in North Carolina
 - b. THINK, KERA FM Live Radio
 - c. Open Minds Institute UCLA
 - d. Rita McGrath - Friday Fireside Chat
147. Week of Mar 7th, 2022
- a. Not Perfect Podcast - 60 mins with Poppy (Georgie Rutherford) in the UK
 - b. Anthony Sarandrea Podcast
 - c. The Super Human Life Podcast

- d. NPR LifeKit
148. Week of Mar 14th, 2022
- a. Joe de Sena Spartan Podcast
 - b. Mario Nanos Family Forum
 - c. FUT Ballerz Podcast
 - d. Jeff Christian Podcast
149. Week of Mar 21st, 2022
- a. Clearhead Webinar New Zealand
 - b. Armchair Expert Podcast with Dax Shepard
150. Week of Mar 28th, 2022
- a. Comes a Time Podcast
 - b. Hopestream Podcast
 - c. Habits and Hustle with Jennifer Cohen Podcast
151. Week of Apr 4th, 2022
- a. Mahon McCann Podcast
 - b. John and Nick Flourishing Philosophy Podcast
 - c. The Crossover Podcast with Dr. Rick Komotar
 - d. John Slye Podcast from Grace Church, Atlanta, Georgia
 - e. Wisdom 2.0, San Jose, CA
152. Week of Apr 11th, 2022
- a. B.Rad Podcast
 - b. Aaron Kaplan podcast
 - c. Gill Tietz Podcast
153. Week of Apr 18th, 2022
- a. Thrive Global Podcast
 - b. SMART Recovery Podcast
154. November 2022 Appeared in the Netflix documentary, *Take Your Pills: Xanax*.
155. Nov 2022 CNN with Michael Smerconish, discussing *Dopamine Nation: Finding Balance in the Age of Indulgence* and smartphone addiction
156. Jun 2023 NPR's Hidden Brain with Shankar Vedantam discussing *Dopamine Nation: Finding Balance in the Age of Indulgence*
157. Jun 2023 Spark on the Canadian Broadcasting Corporation, discussing *Dopamine Nation: Finding Balance in the Age of Indulgence* and smartphone addiction
158. Jun 2023 South Korea's *Money Time*, discussing *Dopamine Nation: Finding Balance in the Age of Indulgence*

Anna Lembke, M.D. Report

EXHIBIT B

Materials Considered

Materials Considered

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239. Deposition of Alex Osborne, January 10, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Snap]
240. Deposition of Alexander Schultz, Volume I, February 27, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
241. Deposition of Alexander Schultz, Volume II, February 28, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
242. Deposition of [REDACTED], February 6, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
243. Deposition of Amber Renee Miller Burchell, December, 18, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [TikTok]
244. Deposition of Amy Ulucay (Classen), Volume I, February 5, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [TikTok]
245. Deposition of Amy Ulucay (Classen), Volume II, February 10, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [TikTok]
246. Deposition of Andrew Kirchhoff, March 17, 2025, In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [TikTok]
247. Deposition of Antigone Davis, Volume I, March 4, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
248. Deposition of Antigone Davis, Volume II, March 5, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
249. Deposition of Aza Raskin, March 17, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Center for Humane Technology - Meta witness]
250. Deposition of Claudia Y. Chan, February 7, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Snap]
251. Deposition of Connor Barrett (Rough), July 17, 2025, In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [YouTube]

252. Deposition of Cormac Keenan, March 24, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [TikTok]
253. Deposition of ██████████, Volume I, December 17, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
254. Deposition of ██████████, Volume II, December 18, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
255. Deposition of David Ginsberg, January 9, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
256. Deposition of ██████████, DrPH MPH, Volume I, October 22, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
257. Deposition of ██████████, DrPH MPH, Volume II, October 23, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
258. Deposition of ██████████, Volume I, March 5, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
259. Deposition of ██████████, Volume II, March 6, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
260. Deposition of Eric Han, Volume I, March 11, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [TikTok]
261. Deposition of Eric Han, Volume II, March 12, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [TikTok]
262. Deposition of Fred Gilbert, February 20, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [YouTube]
263. Deposition of Genoveva Descalzo (Rough), July 18, 2025, In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [YouTube]
264. Deposition of ██████████, December 16, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
265. Deposition of Guy Rosen, Volume I, February 19, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
266. Deposition of Guy Rosen, Volume II, February 20, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]

267. Deposition of [REDACTED], November 14, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
268. Deposition of Jordan Furlong, Volume I, April 11, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [TikTok]
269. Deposition of Jordan Furlong, Volume II, April 12, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [TikTok]
270. Deposition of [REDACTED], Volume I, October 24, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
271. Deposition of [REDACTED], Volume II, October 25, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
272. Deposition of [REDACTED], Volume I, February 27, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
273. Deposition of [REDACTED], Volume II, February 28, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
274. Deposition of [REDACTED], Volume I, February 27, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
275. Deposition of [REDACTED], Volume II, February 28, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
276. Deposition of [REDACTED], PhD, Volume I, November 18, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcripts and Exhibits [Meta]
277. Deposition of [REDACTED], PhD, Volume II, November 19, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
278. Deposition of Lotte Rubaek, April 1, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
279. Deposition of Margaret Gould Stewart, October 21, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
280. Deposition of Mark Zuckerberg, Volume I, March 27, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
281. Deposition of Mark Zuckerberg, Volume II, March 28, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]

282. Deposition of Matthew Tenenbaum, Volume I, January 28, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [TikTok]
283. Deposition of Micahel "Miki" Rothschild, Volume I, January 21, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
284. Deposition of Micahel "Miki" Rothschild, Volume II, January 22, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
285. Deposition of Michael E. Weissinger, December 18, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Snap]
286. Deposition of [REDACTED], Volume I, January 28, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
287. Deposition of [REDACTED], Volume II, January 29, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
288. Deposition of [REDACTED], Volume I, November 7, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
289. Deposition of [REDACTED], Volume II, November 8, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
290. Deposition of [REDACTED], March 3, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
291. Deposition of Peter J. Sellis, February 6, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Snap]
292. Deposition of [REDACTED], Volume I, December 12, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
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294. Deposition of [REDACTED], Volume I, December 5, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
295. Deposition of [REDACTED], Volume II, December 6, 2024, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
296. Deposition of Reagan Maher, February 21, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [TikTok]

297. Deposition of [REDACTED], Volume I, February 11, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
298. Deposition of [REDACTED], Volume II, February 12, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
299. Deposition of Vaishnavi Jayakumar, Volume I, January 30, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
300. Deposition of Vaishnavi Jayakumar, Volume II, January 31, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
301. Deposition of Victoria McCullough, February 19, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [TikTok]
302. Deposition of [REDACTED], PhD, January 28, 2025, In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL 3047), Transcript and Exhibits [Meta]
303. Deposition of [REDACTED], March 18, 2024, State of Tennessee vs. Meta Platforms, Inc., and Instagram LLC (Case No. 23-1364-IV), Transcript and Exhibits [Meta]

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304. Deposition of Adriana Galván, Ph.D., July 15, 2025, In re: Social Media Adolescent Addiction (JCCP No. 5255), Transcript and Exhibits
305. Deposition of Douglas Tucker, Ph.D., July 10, 2025, In re: Social Media Adolescent Addiction (JCCP No. 5255), Transcript and Exhibits Pfeifer
306. Deposition of Jennifer H. Pfeifer, Ph.D., June 26, 2025, In re: Social Media Adolescent Addiction (JCCP No. 5255), Transcript and Exhibits
307. Deposition of Kenneth T. Kishida, Ph.D., July 2, 2025, In re: Social Media Adolescent Addiction (JCCP No. 5255), Transcript and Exhibits
308. Deposition of Randy P. Auerbach, Ph.D., July 10, 2025, In re: Social Media Adolescent Addiction (JCCP No. 5255), Transcript and Exhibits

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309. Defendants' Expert Report of Adriana Galván, Ph.D., In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL No. 3047), July 9, 2025
310. Defendants' Rebuttal Report of Dr. Randy Auerbach to Personal Injury and School District Plaintiffs' Experts, In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation, MDL No. 3047, July 9, 2025
311. Defendants' Expert Kenneth T. Kishida, Phd – Rebuttal Report, Judicial Council Coordination Proceeding (JCCP) No. 5255, May 16, 2025
312. Defendants' Expert Rebuttal Report of Douglas Tucker, M.D., Re: Social Media Cases Judicial Council Coordination Proceedings No. 5255, May 16, 2025

313. Defendants' Expert Rebuttal Report of Dr. Randy Auerbach, Judicial Council Coordination Proceeding No. 5255, May 16, 2025
314. Defendants' Expert Report of Adriana Galván, Ph.D. ,Judicial Council Coordination Proceeding (JCCP) No. 5255, April 18, 2025
315. Defendants' Expert Report of Douglas Tucker, M.D., In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation, MDL No. 3047, July 9, 2025
316. Defendants' Expert Report of Douglas Tucker, M.D., Re: Social Media Cases, Judicial Council Coordination Proceedings No. 5255, April 18, 2025
317. Defendants' Expert Report of Dr. Randy Auerbach, Judicial Council Coordination Proceeding (JCCP) No. 5255, April 18, 2025
318. Defendants' Expert Report of Kenneth T. Kishida, Phd., Judicial Council Coordination Proceeding (JCCP) No. 5255, April 18, 2025
319. Defendants' Expert Report of Kenneth T. Kishida, Ph.D. In re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation (MDL No. 3047), July 9, 2025
320. Defendants' Rebuttal Expert Report of Adriana Galván, Ph.D., Judicial Council Coordination Proceeding (JCCP) #5255, May 16, 2025
321. Defendants' Rebuttal Expert Report of Dr. Ian Gotlib, Judicial Council Coordination Proceeding No. 5255, including Appendices A and B, May 16, 2025
322. Defendants' Rebuttal Expert Report of Dr. Robert Platt, Judicial Council Coordination Proceeding No. 5255, May 16, 2025
323. Defendants' Rebuttal Expert Report, Prof. Nicholas B. Allen, Ph.D., Judicial Council Coordination Proceeding No. 5255, May 16, 2025
324. Jennifer Pfeifer, Ph.D. Rebuttal Expert Report, YouTube-Specific Rebuttal to Reports Submitted by Plaintiff's Experts on April 18, 2025, Judicial Council Coordination Proceeding No. 5255, Submitted on Behalf of Google and YouTube on May 16, 2025
325. Plaintiffs' Expert Report of Dimitri A. Christakis, MD MPH, MDL 3047, May 16, 2025
326. Plaintiffs' Expert Report of Dr. Jean M. Twenge, Ph.D., MDL 3047, May 16, 2025
327. Plaintiffs' Expert Report of Dr. Jean M. Twenge, Ph.D., San Diego State University, JCCP 5255, April 18, 2025
328. Plaintiffs' Expert Report of Dr. Ramin Mojtabai, M.D., Ph.D., MPH., JCCP 5255, April 18, 2025
329. Plaintiffs' Expert Report of Dr. Ramin Mojtabai, M.D., Ph.D., MPH., MDL 3047, May 16, 2025
330. Plaintiffs' Expert Report of Eva Telzer, Ph.D., JCCP 5255, April 18, 2025
331. Plaintiffs' Expert Report of Eva Telzer, Ph.D., MDL 3047, May 16, 2025
332. Plaintiffs' Expert Report, Anna Lembke, M.D. Relating to: Social Media Litigation, MDL 3047, May 16, 2025

Production Bates Numbered Documents

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Deposition transcripts and exhibits listed herein exclude those subject to defense production clawbacks.

Anna Lembke, M.D. Report

EXHIBIT C

Statement of Compensation Rate

Anna Lembke, M.D.
Stanford University School of Medicine
Department of Psychiatry and Behavioral Sciences

Expert Witness Fee Schedule:

Work	Details	Fee
Preliminary Work	Telephone conferences, record review, report writing, and travel	\$800 per hour
Court Work	Court appearances and depositions	\$1000 per hour
Expenses	Travel and other reasonable out-of-pocket expenses	Reimbursement

Anna Lembke, M.D. Report

EXHIBIT D

Prior Testimony

Anna Lembke, M.D.
Stanford University School of Medicine
Department of Psychiatry and Behavioral Sciences

Prior Testimony

- *People v. Philip Morris Ingram*, (Cal. Super. Ct., Docket 62-144622)
- *National Prescription Opiate Litigation*, MDL No. 2804 (N.D. Ohio, Case 1:17-md-2804)
- *In Re Opioid Litigation*, (Suffolk County, New York Supreme Court, Index No. 400000/2017), relating to Case Nos. County of Suffolk, 400001/2017; County of Nassau, 400008/2017; and New York State, 400016/2018
- *Cabell County Commission and City of Huntington, West Virginia, (The Cabell Huntington Community) v. AmerisourceBergen Drug Corporation, Cardinal Health, Inc., and McKesson Corporation*, No. 1:17-op-45053-DAP and No. 1:17-op-45054
- *People of the State of California v. Purdue Pharma, L.P., et al.*, No. 30-2014-00725287-CU-BT-CXC
- *Miner v. Olsen, et al.* (arbitration)
- *The County of Lake, Ohio v. CVS Health Corporation., et al.*, No. 18-op-45032 and 18-op-45079
- *County of Dallas, Texas vs. Johnson & Johnson, et al.*, No. 3:18-cv-00426-M and Cause No. DC-18-00290
- *City and County of San Francisco et al. v. Purdue Pharma, LP et al.* No. 3:18-cv-07591-CRB
- *The Montgomery County Board of County Commissioners, et al. v Cardinal Health Inc. et al.*, Case No 1:18-op-46326-DAP
- *Cobb County, v. Purdue Pharma, et al.* Case No. 1:18-op-45817-DAP
- *Tarrant County, v. Purdue Pharma, L.P., et al.* Case No. 1:17-md-2804
- *Smith, et al., v. TikTok, Inc., et al.*, Los Angeles Superior Court, JCCP No. 5255, Social Media Cases